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THE SPRING PLUMAGE OF THE BOBOLINK, WITH REMARKS ON 'COLOR-CHANGE' AND 'MOULTING.'[1]

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Plate I*a*.

IN a recent note 'On the Spring Plumage of the Bobolink'[2] Dr. Allen has apparently overlooked a record (Skillen, Auk, XI, 1894, p. 180), which shows that the change to breeding dress is not always accompanied by an increased feather-loss, nor in this case at least was new feather-growth evident. In short there seems to have been not even a 'partial moult,'[3] and hence the individual feathers must have changed in color.

My own experience with captive Bobolinks confirms the above statement; but unfortunately of three Bobolinks kept during the winter of 1894–5, only one proved to be a male, while six males

[1] Read before the Nuttall Ornithological Club, May 17, 1896.

[2] Bull. American Museum Nat. Hist., VIII (March 18, 1896), pp. 43, 44.

[3] In the present paper the word 'moult' is to be understood as meaning that during or about the time of the renewal of the plumage, there is an *increased* shedding of the feathers, an evident growth of 'pin-feathers,' or both combined; but it *implies nothing as to feather-color and color-change.*

taken in June 1895, escaped by tearing a hole in the cloth top of the cage. However, through the kindness of Messrs. Allen, Batchelder, Brewster, Merriam, and others, I have been able to compare a series of more than 175 male Bobolinks, probably covering about the same localities and dates as the material used by Mr. Chapman in the preparation of his articles on this subject.[1] Among the skins loaned by the American Museum of Natural History was the specimen from Corumbá, Brazil, on which the hypothesis was originally based *that the black and white dress was entirely due to 'moulting' without any 'color-change' in the individual feathers.* The assumption being that 'moulting' is conclusive proof of the absence of any color-change,— a supposition which has been frequently used by writers on this subject, but one which is absolutely without proof of its correctness as yet, while it is shown to be untenable by examination of the Corumbá bird, as will appear later.

First as to my pet Bobolink, which was kept from January until the breeding plumage was complete: — The bird always seemed well and strong, and the *color-change was* NOT *accompanied by any increase in feather-loss, i. e.*, not greater than during the winter and often for several days in succession there were no cast-off feathers at all to be found. The total during the three weeks that the change was in progress was *thirteen,* — namely two broken rectrices and eleven contour feathers. It is hardly possible that any stray specimens were unnoticed, for even had they fallen outside of the cage they would have been found in the room, and a wire netting protected the window. 'Pin-feathers' could hardly have been overlooked, if present; for I often held the bird in my hand and carefully examined it, blowing back the plumage until the skin could be seen. It is also safe to say, doubtless, that the cast-off feathers were not eaten by the bird itself. Hence it follows that unless the previous plumage was made up of only two tail and eleven body feathers, both of the former on the same side, — which was certainly not the case, — *my Bobolink was unquestionably an instance of color-change in the plumage without 'moult.'*

[1] *Cf.* Auk, VII, 1890, pp. 120–124; also *ibid.*, X, 1893, pp. 339–341.

The possibility of a spring 'moult' being entirely overlooked is worth considering at this point. If we assume for the moment that none of the old feathers change to the color of the breeding dress, and that all which are unlike those of the preceding plumage, have replaced old feathers already 'moulted,' can we then form any idea of the loss during the development of the spring dress of the male Bobolink? In other words, how many feathers would a Bobolink lose during a *complete* 'moult'? I have tried to estimate this approximately in a male Bobolink, killed May 30, by carefully pulling out, one by one, all the contour feathers from the two ventral feather-tracts, including the 'inner lateral,' but neither the 'humeral' nor the 'gular tracts' of Nitzsch;[1] and then gluing each separately on sheets of paper. Both my patience and mucilage gave out by the time I had finished the sheets in question, — about one third of the under parts of the bird.[2] The contour feathers on the sheets amounted to 439 in all, none of which, judging from their color alone, could have formed a part of the winter dress. The feathers on the upper breast, neck, and throat are smaller, and must be relatively more numerous; and it is certainly safe to estimate the total loss from the abdomen, breast, and throat, at three times actually counted, making the total 1317. The back and upper parts must increase this number by at least one half; and *the hypothesis of a 'moult without color-change' would therefore imply a loss of 2634 feathers for the development of the full spring plumage of the male Bobolink.*

If the process lasted from three to six weeks — (it was three weeks from the time the first black spot appeared, until the full plumage of my Bobolink has been attained by color-change

[1] Pterylographia. (English translation by Sclater.) Publications of the Ray Society, London, 1867, p. 26, seq.

[2] It will be noticed that in this estimate the plumage of the head, wings, legs, and tail has not been included. The flight feathers, because they are often broken accidentally, and cast off by cage-birds when not 'moulting'; those of the head and legs, because they are so small as to be easily overlooked; while by omitting the remainder of the wings and tail, and counting the total loss from the upper parts as only one half that from the gastræum, my result must be an underestimate.

alone),—there would be *between 115 and 57 additional cast-off feathers in or near the cage each day*. It is hardly supposable that anyone at all interested in the question of a spring 'moult' could fail to detect its presence with such evidence daily before him during at least three weeks.

In the living bird, accurate data of the loss before and during the progress of a complete 'moult,' are, I believe, unpublished, for any of our native species certainly none are known to me for the Bobolink; and as my bird did not 'moult,' it is impossible to supply the deficiency. But the record of a pair of tame Screech Owls (*Megascops asio*), shows well how sudden may be the onset, and how great the loss during the period of a complete feather-change; and it will also be noticed, that in this,—the only species of which we have exact data,—the total number of loose feathers *found* while the change was most active, exceeds our *theoretical* estimate based on the skin of the Bobolink.

AVERAGE NUMBER OF FEATHERS FOUND PER OWL.[1]

From July 24 to July 31 —ave. daily ½ feather.
" August 1 to Aug. 7 —ave. daily 5 feathers.
" Aug. 8 to Aug. 31 —ave. daily 9¼ feathers.
" September 1 to Sept. 30 — ave. daily 9 feathers.
" October 1 to Oct. 28 —ave. daily 9½ feathers.
" " 29 to Nov. 2 — ave. daily *93 feathers.*
" November 3 to Nov. 30 —ave. daily 90¼ feathers, varying between 81 and 95.
From December 1 to Dec. 7 —ave. daily 17¼ feathers.
" " 8 to Jan. 11 — ave. daily 4 feathers.

During the time that 'moulting' was most active,—namely from Oct. 29 to Nov. 30,—a total of 2806 feathers were actually *found*[2] for each of the two Owls; yet their cage was much of the time out of doors and exposed to the wind, while being made of

[1] As there were two Owls, the numbers given are one half the feathers actually found in the cage.

[2] It may be well to state here that almost without exception the cast-off feathers were practically without any brown or tawny shades, though the bird was in well marked intermediate plumage; while the feathers in which there was considerable brownish, usually showed some mechanical injury, on careful examination.

half inch wire netting, some of the smaller specimens were doubtless blown away and lost, which could not have occurred in the case of the Bobolink. I was curious to know how closely the number of feathers of the 'Scops' agreed with that of the Bobolink, and therefore counted the corresponding pterylæ of the Owl in the way already described. The agreement was unexpected: — the Owl having 501 feathers on the sheets, and an estimated total of 3006 as needed for a complete 'moult'; contrasted with 439, and 2634 of the Bobolink.

Even Dr. Allen's note itself furnishes additional proof that a spring 'moult' would not escape detection. He says: "the molt was in all stages from birds showing only here and there the tip of a black feather on the breast to those that were in nearly full breeding plumage. A large number of these were in the highest stage of molt, pin feathers being distinctly visible . . . even when the birds were several feet distant."

Again in the Corumbá bird 'moulting' was so apparent that in the illustration for 'The Auk,' it was decided to assist Nature by having the 'moult' of the wings and tail completed by the artist. A convincing proof that a 'moult' could not have been overlooked, though hardly so of scientific accuracy; especially as it was also intended to change such of the under parts as were white to black or brown, had a slight mistake not prevented!!

All the evidence at hand is therefore against the possibility of error of observation in regard to the spring 'moult' of the Bobolink; and there seems to be no reasonable doubt that the apparently contradictory statements of Allen,[1] Chapman,[2] Ord,[3] Skillen,[4] and others are correct, though perhaps not yet satisfactorily explained. It follows *that Bobolinks differ as to 'moulting' in spring, — one bird attaining the full plumage by a 'true color-change,' another perhaps passes through a complete 'moult,' while in a third both processes are combined.*

It is however generally taken for granted, that because a certain bird has been found 'moulting' in spring, all individuals of the

[1] *L. c.*, p. 44.
[2] *L. c., antea.*
[3] Trans. Amer. Philos. Soc. III (1830), pp. 292–299.
[4] *L. c., antea.*

same species must 'moult' also; but have we any proof that this is the case? None whatever! The physical condition must vary in different individuals, be they men or birds; and hence the need of new feathers and the power of producing them, must vary also; and it is certainly more probable that Nature would be guided by the condition of the individual bird, than that the rulings of modern systematists would be followed. In short *some Bobolinks 'moult' in spring, others do not.*

To return to my Bobolink: — The first black spot appeared on March 28 and consisted of a single feather, which macroscopically and microscopically, was evidently not of recent growth, the edge being quite uneven and no remains of the enveloping sheath being present. (Plate I*a*, fig. 3.) Subsequent specimens were similar to it in all essential details. In some of the changing feathers the black first developed around several foci, scattered about the surface of the vane, from which the dark effect spread, until the isolated spots became confluent and the whole was the uniform black shade of the spring dress. In other examples the dark color gradually extended towards the periphery, starting from the proximal portion of true vane and medially from along the rhachis.[1]

In about three weeks from the time the first black feather was noticed the full black and white breeding dress of our familiar songster was complete. No chestnut was at any time seen on the breast or under parts, nor was there the white on the centre of the breast and abdomen, which is so prominent in the Corumbá bird.[2]

[1] As there was no feather-loss it seemed unnecessary to mark and follow up the intermediate steps through which any one feather passed; moreover, it is impossible to mark a feather without injuring it, and my previous attempts had not been encouraging. (*Cf.* Auk, XIII, Oct. 1894, p. 323.)

[2] The majority of the white feathers on the breast of the Corumbá bird showed no color except white in the vane proper — *i. e.*, exclusive of the downy parts of the feather, which were a pale slate color. Some of these white feathers were *not fully mature*, while others are more or less worn and of *old growth*. Even supposing that all the worn white feathers would have been 'moulted', those which were still immature would hardly be cast off before the time the Bobolink appears in the South when no such completely white feathers are normally found. My Bobolink showed none of this white marking on the breast or abdomen, nor did it have the chestnut shading, which is so prominent in

The buff edging of the breast feathers was never more than a narrow line, evidently owing to the absence of the long fugacious tips, which are so characteristic of the newly developed feathers, and it is therefore probable that spring males showing much buff suffusion beneath, have recently passed through a 'spring moult,' or at least through a partial 'feather-change.'

The dealer from whom I bought the bird told me, that "last fall he (the Bobolink) lost lots of feathers"; and added: "In spring Bobolinks don't often lose any feathers to speak of. Sometimes I don't believe they lose any feathers at all; and you can't see any pin-feathers either while they are getting black. But in autumn the pin-feathers stick out all over them. Once in a while though, I've seen one have a regular moult, just as they do in fall." The above was written verbatim at the time, and is further proof that *because one individual of a given species has 'moulted,' it does not necessarily follow that all individuals of that species 'moult' also.*

Turning next to the series of skins: — The only early spring material is from Corumbá, Brazil. The male already referred to (Coll. Amer. Mus. Nat. Hist., No. 32783,) taken March 1, shows new feather-growth in a marked degree; and as was pointed out by Mr. Chapman, 'moulting' was in full progress. It is however quite another matter to prove that no color-change was also going on simultaneously in any of the feathers; for *though without the loss of old feathers from the tracts concerned, — or in other words, in the absence of 'moulting,' — an alteration in color must be due to a color-change in the same feathers; yet it does* NOT *follow, on the other hand, that because a bird is 'moulting,' a color-change in the individual feathers — be they old or new — is thereby excluded.* In fact the Corumbá bird itself furnishes conclusive proof that just the reverse is the case; and on careful examination one finds here

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the Corumbá specimen, and Dr. Allen says nothing of any similar coloring among the birds seen by him. When we call to mind the fact, — to be referred to later, — that the black of the Bobolink is really due to brown, instead of black coloring matter, — it is at once clear that the excess of chestnut and white show a lack of the normal quantity of pigmented matter; and it seems almost sure that in the Corumbá bird, we have not a normal example, but a partial albino!

and there old-growth feathers, which are black, like the breeding-dress (*cf.* fig. 1); and others of the new-growth, which are the color of the Reed-bird plumage (*cf.* fig. 2).

Male Bobolinks in autumn, after the cares of the breeding-season are over, would probably require a complete renewal of the plumage, and a color-change in the old-growth would hardly be expected to occur. Pin-feathers typical of the black summer dress can be occasionally found, however, if carefully looked for (*cf.* fig. 4), and apparently change to the color of the autumn plumage later (*cf.* fig. 5).

We have now seen that feather-change and color-change in some cases at least, do take place separately and entirely independent of each other, though the two are also often in progress at the same time. *Hence it necessarily follows that neither can be the direct cause of the other; but that color-change must be recognized as an independent process, entirely distinct from so-called 'moulting.'*

The color-changes in the feathers of the Bobolink, of which I have now I think given sufficient proof, are the less surprising, in view of the fact that the black feathers apparently contain *very little or no black coloring-matter.* Thin transverse sections through the exposed portion of the vane of black breast-feathers, when examined with a high magnifying power and a strong *white*[1] light, show that the seemingly deep black color is really due to a *brownish* pigmented material,[2] generally (always?) grouped superficially near the surface of the vane; to some extent also to the thickness of the part, and to the effect of the underlying structures. Thus in the black spring specimen the granules are peripheral and comparatively close together, though a smaller number are also found in the deeper parts; while in the autumn the granular

[1] The most satisfactory light I have tried for color work with the microscope is that from a clear sky, reflected from a mirror covered with a white, highly glazed paper, and hung at an angle outside of a north window.

[2] To show that there is a very large amount of brown coloring matter even in breast feathers of the deepest black, it is only necessary to place such a specimen between two pieces of clear glass, and hold it against a strong light. The greater part, — sometimes the whole, — of the contour portion will appear ochraceous, being brightest along the edges of the barbs and barbules, where the parts are thin. This last, however, cannot be seen without a good magnifying glass.

pigmented matter is more uniformly scattered throughout. (Compare figs. 6 and 7.)

No difference between the pigmented matter of the spring and fall feathers was detected by the usual chemical and microchemical tests, which will be described more fully in another connection.[1]

RESULTS: — Summing up the more important points brought out by our study of the spring plumage of the Bobolink, we have seen that: —

1. Color-change in the individual feather is *fact, not theory.*
2. 'Color-change of the plumage without moulting' is also *fact, not theory;* and the change to breeding dress in the male Bobolink sometimes takes place without a so-called 'moult.'
3. Different individuals of the same species vary as to 'moulting' when assuming the spring plumage; and the fact that one Bobolink 'moulted' is no proof that all Bobolinks do the same.
4. The contradictory statements of writers are accounted for by this individual variation; and such statements are not to be passed over as so-called 'errors of observation.'
5. Color-change and feather-change are two distinct processes, neither being the direct cause of the other; and each occurs separately, as well as both together.
6. So-called 'moulting' (whether based on pin-feathers or on feather-loss), does not prove the absence of color-change; but to be valid, the proof must be based on the loss of all the old feathers from the tracts concerned. No such evidence has as yet been recorded.
7. Microscopically, the black and the buff feathers of the Bobolink differ only in the massing of the brown pigmented matter nearer the surface of the former; while it is more uniformly distributed in the latter. The usual tests fail to distinguish the pigmented material of the breeding from that of the fall plumage.

[1] Since the above was written, I have obtained similar proof that the Indigo Bunting (*Passerina cyanea*) also shows a like "individual variation" in regard to its spring change of plumage, — a male having developed the full breeding dress without appreciable feather-loss; while another male, which I saw several times, had a considerable number of pin-feathers, and also many cast-off feathers in the cage.

In conclusion, I wish to add a few words on the subject of 'MOULTING' in its wider application: — First, it is most important to have an exact definition of the word '*moult*,' which has often been used with very different meaning; namely, for new feather-growth, of the whole, or of a part of the plumage, for feather-loss, for complete, or slight changes of color whether caused by feather-change, by true color-change, or simply from mechanical 'wear and tear,' and the shedding of the deciduous tips. The word 'moult' is too firmly established, and too convenient to be abandoned, but its use should be restricted to *the regular seasonal feather-change*, WITHOUT REGARD TO THE COLOR OR COLORATION OF THE PARTS CONCERNED; *and when not farther qualified, the shedding of all the feathers, including the large flight feathers, should be understood.* The expressions, '*feather-loss*,' '*new feather-growth*' and '*feather-change*,' are scientifically exact, they define themselves, and are the equivalents of German terms, already in use. Why should not these, or some similar words be adopted by us.

Second: — The meaning of 'COLOR-CHANGE' would seem to be sufficiently clear, yet it has been very differently interpreted by writers on the colors of feathers; and such sentences as, "color-change, aside from the effects of exposure and fading", are often used. Moreover, as a rule, those who are sceptical on the subject of 'color-change without moult,' refuse to admit that an alteration from a darker shade to a lighter tint is an instance of a change in color. Yet obviously, the development of a lighter color may be either a *true* color-change, in the most strict sense, or it may be purely mechanical with resulting loss of substance. As applied to feathers therefore, *any perceptible departure from the former shades and tints, or from their previous distribution, is a color-change.* When used in connection with the subject of 'color-change without moult,' however, it is clearly intended to exclude alterations due to causes, acting from outside the body, and mechanically; and thus limited, A TRUE COLOR-CHANGE *is wholly, or in part due to conditions within the organism, or within the feather itself; to alterations in the coloring-matter, or in its distribution in the feather.*

Third: — FADING, *as already stated, implies a gradually progressive change from a darker shade to a lighter tint, resulting from conditions external to the body.*

Without a definite understanding on these points, any rational discussion of the colors and color-changes in feathers, must of necessity be both unprofitable and misleading.

SUPPLEMENTARY NOTE. — It has been suggested that an outline of the results of a more detailed study of the alterations on which changes in color in the feather depend is needed to complete the present paper.

1. *The mature feather* (*i. e.*, one which has reached full functional development), is far from being "dead and dry," "a foreign body no longer connected with the vital processes in the rest of the organism," as has sometimes been asserted; for during *its* life it receives a constantly renewed supply of fluid from the parts around it. In strong contrast to this is the really dead feather, in which this fluid matter is deficient, as for example, the majority of uninjured cast-off feathers. Some of the evidence in support of these facts may be of interest: — (*a*) The fatty or oil-like droplets on the surface of the feather can be shown by microchemical tests (staining, etc.), to be, some of them identical with the oil from the so-called 'oil-gland'; while others are totally unlike that secretion, and these latter are alone found exuding from the pores on the surface of the rami, radii, and shaft. The pores, some with drops of varying size issuing from them, show best at the distal ends of the segments of the downy rays. (*b*) In the living bird the imported fluid can be colored, *its progress noted, and the feather stained intra vitam.* Soon after death this becomes no longer possible. To see the stain the microscope is usually necessary. Call this "osmosis," "capillarity," or what you please, it is none the less a *vital process*, in that it ceases soon after death, and must be studied in the fresh feather. (*c*) The broken tips of the rays forming the vane are, when fresh, capped by a mass of the fluid, which has escaped, leaving the part immediately below the stump pale from the loss of the fluid pigmented matter. (*d*) In museum skins this fluid matter gradually dries and by its consequent increase in density, and that of the feather tissues, the colors darken; while the freshness and gloss of life disappear. (*e*) The evanescent tints of some species, — notably the fading of the rosy 'blush' of some of the Terns, soon after life is extinct is due to the drying up or escape of this fluid, while the lost tint was

due to the physical effect of structure, the shrivelling and change of form would act on the light rays, and the former colors would be lost in consequence. Comparison of specimens of *Sterna paradisæa*, *S. dougalli* and other Terns in my collection, shows that examples having the 'blush' most marked are those in which the feathers are the least dry. Absolutely fresh specimens are hardly obtainable, owing to the destruction of these birds for the demands of fashion. It is probable that the same explanation will be found to be true in the fading of other species. (*f*) Other substances than red pepper (*cf.* Auk, XIV, 1896, p. 33) when given with the food, also produce changes in the color of the feather and in its composition, recognizable by proper tests. This applies to other species than the Canary.

2. *Change of color in the individual feather after maturity.*— How the colors of feathers can change; the *modus operandi* of the process, has long been an ornithological stumbling block, but the explanation is, I believe, neither incredible, nor complicated, and in fact most simple and easily accounted for by well known physiological laws. It may be briefly summarized as follows:—(*a*) As the result of retrograde or other activity within the cells, and with or without the action of the imported fluid, new pigmented products are formed, which may be solid matter or may be in solution, but are unlike those previously present. (*b*) Vital conditions within the organism determine the composition of the fluid supplied to the feather, as well as the amount of the supply; and hence indirectly regulate the character of the new compounds in the feather, into which the fluid enters or which depend upon its influence. Thus at the mating season there would be an alteration in the amount and character of the fluid received by the feather, and a freshening and often a color-change quite distinct from a more or less complete feather-change, and in some cases without any associated 'moulting,' which would be a separate process, even if present.

EXPLANATION OF PLATE I*a*.

(NOTE:—Figs. 1, 2, 4, and 5 were first photographed, and the prints from the negatives then colored from the original specimens; thus insuring absolute accuracy in outlines. They are about twice the natural size. Fig. 3 was outlined with a camera lucida to secure exactness, and

then colored from nature. It is a little enlarged. Figs. 6 and 7 were drawn and tinted from specimens under the microscope.

It is a pleasure to acknowledge my indebtedness to Mr. Baldwin Coolidge for the care and skill with which he has reproduced the original colors. Fig. 3 is by the author.)

Figure 1. Spring color-change without 'moult' of the feather. An old feather of the color of the spring plumage. (March 1, Brazil, Corumbá. Coll. American Mus. Nat. Hist., No. 32783.)

Figure 2. Spring 'moult' without color-change in the feather. A new-growth feather the color of the winter dress. (March 1, Brazil, Corumbá. Same skin as preceding.)

Figure 3. Spring color-change without 'moult' of the feather. The first black feather seen on my Bobolink. (March 28, cage-bird.)

Figure 4. Fall 'moult' without color-change of the feather. A new feather, but the color of the preceding plumage. (August 29, Minnesota. Coll. Amer. Mus. Nat. Hist., No. 52326.)

Figure 5. Fall 'moult' with partial color-change of the feather. A new-growth feather, showing the 'foci' of darker shade, partly obscured by the yellow of the fall dress. (August 2, New York. Amer. Mus. Nat. Hist., No. 32785.)

Figure 6. Spring feather, transverse section. From a deep black feather of the breeding dress, in its terminal third. Granules of coloring matter, chiefly massed peripherally, producing the effect of black. (May 30, Mass. Coll. A. P. C., No. 2672.)

Figure 7. Fall feather, transverse section. Like Fig. 6, but of the Reed-bird type. Granules not massed peripherally, but scattered throughout. (September 17, Mass. Coll. A. P. C., No. 3522.)

(Figs. 6 and 7 with Zeiss 4 mm. apochromat. objective, and No. 6 comp. ocular.)

REMARKS ON THE SPRING MOULT OF THE BOBOLINK.

BY FRANK M. CHAPMAN.

IN his paper on "The Spring Plumage of the Bobolink, with Remarks on 'Color-Change' and 'Moulting,'" published in this number of 'The Auk,' Dr. Chadbourne has shown that captive

Bobolinks may change from the winter or Reedbird plumage to the black, buff and white dress of the breeding male without moulting. The discovery is of such importance and has so wide a bearing upon problems connected with changes of color in the plumage of birds, that, having handled a large part of the material which Dr. Chadbourne has studied, it has seemed advisable to follow his paper with remarks upon several questions he has therein discussed.

Laying aside for a moment the fact that the change observed occurred in a caged bird, we have here for the first time a definite description of a change in the color of a bird's plumage without moult with an explanation of its cause in certain feathers. This change, it should be noted, is not due to repigmentation, or "influx of new pigment," which has so often been spoken of as an observed fact, nor even to a chemical change in the pigment, but to a redistribution in the shaft or barb of the feather, of the existing pigment. Dr. Chadbourne says: "Thus in the black spring specimen the granules are peripheral and comparatively close together, though a smaller number are also found in the deeper parts; while in the autumn the granular pigmented matter is more uniformly scattered throughout." It will be observed therefore that no vascular connection between the feather and the dermal papilla in which it is set is claimed, nor is there any evidence to show that the feather can renew itself either by repigmentation, or by a fresh growth restoring a worn or ragged feather to its perfect shape, as claimed by Herr Gätke and other theorists. It is these two theories, repigmentation and new growth in an old feather, that Dr. Allen and others have combated as physiologically impossible, and Dr. Chadbourne alone of all the advocates of color-change without moult, has shown that this change may take place by a comparatively simple process, which nevertheless accomplishes remarkable results.

In demonstrating his point Dr. Chadbourne has placed in our hands a very dangerous tool. It is evident that extreme care is necessary in conducting observations of the kind he has made, and that satisfactory results can only be obtained through continued observation of the same individual.

It is of course well known that cage-birds may moult very irregularly, and this is particularly true of Bobolinks. Dr. Allen[1] records numerous individuals moulting in the spring while Dr. Chadbourne's specimen lost practically no feathers at that season. In a bird store in New York City at this time (November) are two male Bobolinks still wearing the black breeding dress. Before admitting, therefore, that the changes which occur in the plumage of a cage-bird may also take place in birds in a state of nature, it will be well to examine that part of Dr. Chadbourne's paper relating to the specimens of wild Bobolinks he has studied. This refers largely to the Corumbá, Brazil, specimen (Am. Mus. No. 32783) figured in a previous number of this journal.[2] In describing this specimen,[3] I have said that it was passing from the Reedbird to the black Bobolink plumage by a *complete* moult. In fact the only feathers of the old plumage remaining are the first primary and five inner secondaries of the right wing, four inner secondaries of the left wing, the primary coverts and scapularies of both wings, and some of the under wing-coverts. Old contour feathers may be found in the centre of the back and in small numbers about the head, neck, and upper breast. In all these parts the moult is in progress and these old feathers would evidently soon have been replaced by those of the new plumage. The centre of the lower breast and the centre of the abdomen are still occupied by the old plumage, the feathers of this part being, as in the adult Reedbird, white tinged with yellow. An August moulting, adult Bobolink has nearly acquired the Reedbird plumage but, as in the Corumbá bird, the feathers of the middle of the abdomen have not as yet been moulted, apparently showing that these feathers are the last to be shed.

[1] Bull. Am. Mus. Nat. Hist., VIII, 1896, p. 44.

[2] The Auk, X, 1893, p. 309. Dr. Chadbourne's remarks upon this plate (*antea*, p. 141) would imply that acting under my instructions, the artist had partially completed the moult of the Corumbá bird therein figured, and I must confess that my own statement regarding it would lead one to the same conclusion; but as I was not in this country when either the drawing or lithograph was made and, beyond the fact that the plate was contemplated, knew nothing whatever about it, I can hardly be held responsible for its inaccuracies.

[3] The Auk, VII, 1890, p. 120.

Dr. Chadbourne has examined this Corumbá specimen, but his conclusions differ from my own. In brief, he says that the moult is not a complete one, but that certain feathers of the winter plumage have changed to the color of the breeding plumage, and that in the white area of the abdomen there are some white feathers not fully mature. He further says: "My Bobolink showed none of this white marking on the breast or abdomen, nor did it have the chestnut shading, which is so prominent in the Corumbá specimen, and Dr. Allen says nothing of any similar coloring among the birds seen by him. When we call to mind the fact, to be referred to later, — that the black of the Bobolink is really due to brown, instead of black coloring matter, — it is at once clear that the excess of chestnut and white show a lack of the normal quantity of pigmented matter; and it seems almost sure that in the Corumbá bird, we have not a normal example, but a partial albino!"

In attempting to explain the reason for this difference in Dr. Chadbourne's opinion and my own, let us first consider the question of change in the color of an old feather (figure 1 of the plate accompanying his paper). The plumage of the Reedbird, especially of adult specimens, often contains black feathers, the terminal yellow tips of which show them to be new. Dr. Chadbourne figures such a feather in his plate (fig. 1). What becomes of these feathers? In an adult male taken September 25, in Jamaica, W. I. (Am. Mus. No. 42134) nearly all the feathers of the breast and sides are so marked. The bird could not well lose them without these parts becoming featherless. There is no reason to doubt, therefore, that they are retained until the spring moult, and in my opinion it is on one of these black feathers that Dr. Chadbourne bases his statement of spring color change without moult of the feather in the Corumbá specimen, when in truth there is no evidence whatever to show that this feather was not black when it was acquired at the preceding moult.

As to the "not fully mature feathers" which Dr. Chadbourne reports finding in the white area on the lower breast and abdomen of the Corumbá bird, one of which he figures (fig. 2), I must confess that after the most careful search I have failed to

find a single new white feather in this or any part of the bird's plumage. I do find, however, new black feathers appearing, and there is in my mind, no doubt but that in due time these yellowish white feathers of the fall plumage would have been replaced by the black ones of the spring plumage.

And this brings me to Dr. Chadbourne's statement that these white feathers and a "chestnut shading" are evidence of albinism in the Corumbá specimen, neither of them being shown in his cage-bird. As for the white feathers in the abdomen, allowing for a slight fading and abrasion due to their having been worn for a longer time, they are exactly like those found in the same part of several Reedbirds in the collection of the American Museum. In other words, they appear perfectly normal and are in no way albinistic. The "chestnut shading" mentioned by Dr. Chadbourne as an evidence of albinism in the Corumbá bird, and as not shown by his cage-bird, I am unable to detect. In any event, it is obvious that the two birds are not comparable. With the exception of the white abdominal area the few old feathers remaining in the plumage of the Corumbá bird do not materially effect its color, which is that of the newly grown feathers, while Dr. Chadbourne's cage-bird was acquiring its spring dress not by moult, but by change of color in the old feathers. I think, therefore, that Dr. Chadbourne is mistaken when he states that the Corumbá bird is "apparently a partial albino," and I must again assert my belief that this bird is acquiring its breeding plumage by a *complete* moult.

Admitting this, it may be said that one moulting specimen does not prove that all wild Bobolinks moult in the spring, and, in replying to this objection, I am very glad to find that Dr. Chadbourne and myself are in accord as to what constitutes evidence of spring moult in the Bobolink. Speaking of his cage-bird he says: "The buff edging of the breast feathers was never more than a narrow line, evidently owing to the absence of the long fugaceous tips, which are so characteristic of the newly developed feathers, and it is therefore probable that spring males showing much buff suffusion beneath have recently passed through a 'spring moult,' or at least through a partial feather change." It is these tips which give the freshly moulted Corumbá bird so

singular an appearance, and they are undoubted proof of new growth.

In the Corumbá bird they form about the terminal fifth of the feather. Thus a breast feather measures, from tip to insertion, .75 of an inch, of which the buff tip occupies .15 of an inch. A feather from the same region in a June Bobolink, from which the tip has fallen, and which is further worn, measures only .50 of an inch. There can be no reason to question therefore that feathers having these tips are recently grown. I emphasize the point, for I have yet to see an April Bobolink, and I have examined numerous specimens, in which these tips were not prominent. It is, therefore, not alone upon the Corumbá specimen but upon these April birds that I base my theory of a spring moult in *Dolichonyx*. How or when a caged Bobolink may change plumage no man can predict but among wild birds there is as yet no recorded evidence that the breeding plumage is not acquired by a complete moult.

DESCRIPTIONS OF TEN NEW SPECIES OF BIRDS DISCOVERED BY DR. W. L. ABBOTT IN THE KILIMANJARO REGION OF EAST AFRICA.[1]

BY CHARLES W. RICHMOND.

A VERY valuable collection of birds made several years ago in the Kilimanjaro region of East Africa and presented to the United States National Museum by Dr. W. L. Abbott, not only supplied to the Museum many species previously unrepresented in its collections, but contained numerous species new to science. Various causes, mainly lack of material for comparison, have prevented the correct determination of a large part of the collection, although recently, through the generosity of Mr. A.

[1] By permission of Mr. F. W. True, Executive Curator, U. S. National Museum.

Boucard, the Museum series has been greatly enriched by the addition of many African birds as well as by a large number of specimens (several thousand) from various parts of the world. In the meantime, however, the great activity shown by English and German naturalists in the ornithology of this region resulted in the discovery of many new species, among them several of those first collected by Dr. Abbott. In order to reserve for Dr. Abbott the credit of discovering a few new species in the Kilimanjaro region, it is thought best to publish with as little delay as possible descriptions of the ten species presented below, which were identified in a recent partial examination of his collection. It is hoped that a full catalogue of this very interesting collection may be given in the near future.

1. **Crithagra kilimensis,** new species.

Type.—No. 118331, U. S. N. M.; male adult, Mount Kilimanjaro, 6000 feet, August 11, 1888; Dr. W. L. Abbott, collector.

Top of head (including forehead), sides of neck, back, scapulars, rump, and upper tail-coverts almost uniform olive grayish brown (between olive and hair brown), most of the feathers with very slightly darker centres; the head slightly darker than the back, the latter and upper tail-coverts with a slight greenish wash; lores blackish, a minute supraloral white spot, only noticeable on disturbing the feathers; feathers around the eye blackish, some of them with white bases; a narrow supra-auricular streak, white, interrupted with dusky; cheeks, chin, and sides of face near base of bill blackish, the feathers with more or less concealed white at bases, except at base of chin; fore throat with some white on bases of feathers; rest of throat, chest, sides of breast, ear-coverts, and remainder of cheeks, hair brown, with a slight olive tinge; some of the feathers of chest with darker centres; centre of breast, abdomen, sides of body and flanks buff, darker on the first named, where obscurely streaked with hair brown, the streaks becoming more pronounced, broader and darker on sides of body and flanks; under tail-coverts dusky brown, broadly edged with buff; thighs dusky brown, tipped with buff; wings and tail blackish brown, each feather (except first primary and outermost tail feather) edged with greenish yellow; tertiaries with greenish white tips, mostly on outer webs; lesser wing-coverts olive green; middle coverts blackish brown, with olive green edges, and greenish white tips, forming a bar; greater coverts blackish brown, edged with greenish yellow, and tipped with greenish white, forming a second wing bar; alula and primary coverts blackish brown, narrowly edged with olive green; axillaries maize yellow;

edge of wing light olive yellow; under wing-coverts light grayish, tipped with maize yellow; inner webs of primaries on under surface grayish white. In the dried skin the bill is dark brown above, whitish below; feet and tarsi light brown. Wing, 3.25 inches; tail, 2.70; tarsus, .77; culmen, .63. A second male measures: wing, 3.28; tail, 2.75; tarsus, .76; culmen, .61. This specimen is a trifle more olive on the back, rump, and upper tail-coverts; the chest and breast are browner; buff of under parts deeper, and under tail-coverts almost wholly of this color. It was collected April 16, 1888, while the type, described above, was taken in August.

This new species finds its nearest ally in the recently described *Crithagra albifrons* Sharpe, from Kikuyu and Mount Elgon, and both species are more or less closely related to *C. burtoni* from the Cameroons. From *C. albifrons* it differs in the absence of a white band across the base of the feathers above the lores, but the various more or less concealed white markings about the upper throat, cheeks, and below the base of the ear-coverts is an indication of close relationship with that species. The chin is black in *C. kilimensis* instead of dusky gray as in *C. albifrons;* the tips of the middle and greater wing-coverts are greenish white instead of white; the tips of the greater series are not narrower than those of the median coverts. In both size and color *C. kilimensis* stands between *C. burtoni* and *C. albifrons.*

Only two specimens of this species were obtained by Dr. Abbott, the type at 6000 feet, and the other at 7000 feet. Other explorers of Kilimanjaro have apparently not observed this species.

2. **Crithagra striolata affinis**, new subspecies.

Type.—No. 118319, U. S. N. M.; male, adult, Mount Kilimanjaro, 6000 feet, June 12, 1888; Dr. W. L. Abbott, collector.

Upper surface, from forehead to rump yellowish olive, mixed with yellowish buff on nape, occiput, and to a less extent on back, all of the feathers with dark brown centres, giving a streaked appearance; centre of forehead and crown with a decided yellowish wash; sides of forehead naples yellow, passing into buffy white on a broad superciliary streak which extends to sides of neck; lores, feathers around eye, ear-coverts, cheeks, and a line from gape to ear-coverts brownish olive; line above cheeks, and a spot at base of upper mandible and under eye buffy white, tinged with yellow; throat buffy white, with a pronounced wash of wax yellow; sides of neck pale buff, streaked with dark brown; rest of under surface buff, much deeper on flanks; breast and sides of body conspicu-

ously streaked with dark brown; feathers of under tail-coverts with dark brown centres; thighs pale brown, with a yellowish tinge, some of the feathers indistinctly streaked; wings and tail blackish brown, the feathers (except outermost tail feather and first primary) edged with olive yellow on the outer webs; tertiaries with paler, whitish edges; lesser wing-coverts greenish olive; middle coverts blackish brown with whitish tips; greater series blackish brown, edged externally with olive yellow with whitish tips; primary coverts and alula blackish brown, narrowly edged externally with olive yellow; axillaries brownish buff, mixed with yellow; edge of wing yellow; under wing-coverts pale wood brown. Wing, 2.58 inches; tail, 2.44; tarsus, .83; culmen, .51.

Three other specimens in the collection, all females, obtained at altitudes of 5000 and 7000 feet, in April and May, 1888, and October, 1889, resemble in color and size the adult male described above, but they are slightly duller in appearance.

This form has been observed in East Africa upon several occasions and Dr. Sharpe has twice directed attention to differences between specimens from this region and Abyssinia (the type locality of *C. striolata*). He observes,[1] "the specimen from Kilimanjaro has a yellowish chin and more olive-yellow on the wing-coverts, but as some of the Abyssinian specimens also show a little of the latter colour, there is probably no real difference between birds from the two localities"; and again in his report on Mr. Jackson's collections[2] he writes of specimens from Mount Elgon and Kikuyu, "taken as a whole the members of the present series, as well as the Kilimanjaro birds in the British Museum, are darker than Abyssinian examples." In addition to the differences mentioned by Dr. Sharpe the Kilimanjaro birds are smaller, and I have separated them accordingly.

3. **Estrilda cyanocephala,** new species.

Type. — No. 118252, U. S. N. M.; male, adult, Useri river, near Mount Kilimanjaro, January 12, 1889; Dr. W. L. Abbott, collector.

Whole head, breast, sides of body, rump, upper tail-coverts and tail nile blue, somewhat darker on the inner webs of the tail feathers; nape, back, scapulars, wing-coverts, and sides of neck wood brown; wings ashy brown, edged with wood brown; lower breast, abdomen, under tail-coverts,

[1] Catalogue of Birds Brit. Mus., XII, 1888, 364.

[2] Ibis, 1891, 258.

thighs, axillaries, and under wing-coverts cinnamon buff; edge of wing nile blue. "Bill and irides red." Wing, 2.08 inches; tail, 2.14; tarsus, .58; culmen, .36.

This species is closely related to *E. angolensis*, but the entire head is blue; the brown of the upper surface and wings is darker, and the abdomen and under tail-coverts are of a deeper color.

A second specimen in the collection, also an adult male, was collected on the plains east of Kilimanjaro, October 5, 1888.

4. **Cinnyris nectarinioides,** new species.

Type. — No. 118227, U. S. N. M.; male, adult, Plains east of Mount Kilimanjaro, October 1, 1888, Dr. W. L. Abbott, collector.

Entire head, neck, back, rump, and lesser wing-coverts metallic brassy green; upper tail-coverts metallic steel blue; lower throat narrowly edged with metallic deep blue; breast with a broad band of orange-vermilion; yellow pectoral tufts present; abdomen, under tail-coverts, wings and wing-coverts (except least), under wing-coverts, and tail, black, the latter with the feathers (central ones particularly) edged with purple basally, and with green on terminal half. Bill, feet, and tarsi black in dried skin. Wing, 2.03 inches; tail 1.47; narrow central feathers, 2.25; tarsus, .60; culmen, .70.

Another adult male, obtained October 22, 1888, at Aruscha-wa-chini, southwest of Kilimanjaro, measures: wing, 2.07 inches; tail, 1.47 (central pair of feathers narrow but not fully grown); culmen .72.

This specimen agrees very closely with the type, but the greater wing-coverts are narrowly edged with metallic green.

This species seems to be related to *C. mariquensis*, or to one of its subspecies, but differs from all of them in the possession of moderate yellow pectoral tufts, and in the very narrow long central tail feathers, which project three quarters of an inch beyond the rest of the tail.

Captain Shelley has called attention to an occasional tendency in *C. mariquensis* to the development of long central tail feathers, but in the specimen observed by him the central feathers were only 0.15 inch longer than the rest of the tail, while in the present case they are fully 0.75 inch.

5. **Amydrus ? dubius,** new species.

Type. — No. 118112, U. S. N. M.; female, adult, Taveita, East Africa, August 17, 1888; Dr. W. L. Abbott, collector.

Entire head, nape, rump, upper tail-coverts, and whole under parts slate gray, with a slight greenish purple gloss; feathers of rump, and upper tail-coverts with blackish centres; lores and a narrow ring around eyes black; thighs blackish; back and scapulars glossy purplish black, with a slight bronzy wash; wings and tail black; primaries with the greater part of the inner webs cinnamon rufous, and a narrow line along the outer web, next the shaft, of the same color, but not visible externally when the wing is closed; wing-coverts black, like upper surface of wing; lesser coverts a trifle more glossy; under wing-coverts and axillaries like under surface of body but without gloss; edge of wing black. Wing, 3.85 inches; tail, 3.07; tarsus, .80; culmen, .73; width of bill at base, .38; length of first primary (exposed portion), .70. "Irides light yellow."

A single specimen of this interesting bird was obtained by Dr. Abbott. It is referred with some doubt to *Amydrus*, since it differs from the known species of this genus in its small size, circular nostrils, and concealed (instead of exposed) rufous of the wings. It has been carefully compared with descriptions of related genera, but differs from the majority of them in having the wings longer than the tail. This last character is apparently all that separates it from Cabanis's *Myiopsar*[1] [= *Pœoptera*]. In describing his *Myiopsar cryptopyrrhus*, Dr. Cabanis expressly states the tail to be longer than the wing and to resemble that of *Calornis metallica;* also that the nostrils are small, round and open. Dr. Sharpe, however, in a note[2] on *Pœoptera lugubris*, redescribes the birds after an examination of the type, and gives measurements ("wing 3.5, tail 3.3") which indicate exactly the opposite state of affairs. It is quite possible a typographical error has crept into the figures given by Dr. Sharpe. This ornithologist considers *P. lugubris* and *P. cryptopyrrhus* to be very distinct, but I am unable to find the latter in Shelley's 'Birds of Africa.'

In some respects *Amydrus dubius* resembles a diminutive *A. walleri;* the gray of the head is quite similar, but a trifle lighter, and with a slight purplish rather than a greenish gloss; the bill, much smaller than in *walleri*, of course, is of very much the same shape, but the culmen is less keeled, and the nostrils are small and circular; the subterminal notch on the maxilla is as far from

[1] Journal für Ornithologie, 1876, 93.

[2] Proc. Zool. Soc. Lond., 1878, 804.

the tip as in *A. walleri*, thus being proportionally more distant than in that species.

The rictal bristles are weak; first primary quite pointed; rufous color on under surface of wing occupies almost exactly the same area as in *A. walleri*, but on the second primary the inner half of the inner web only is rufous; second and third primaries almost equal in length; fourth primary longest; tail considerably graduated, distance between longest and shortest feathers .60 inch. Tarsus scutellated.

6. **Pholidauges femoralis,** new species.

Pholidauges fischeri SHELLEY, Proc. Zool. Soc. Lond., 1889, 368 (Kilimanjaro, 6000 feet).

Type. — No. 118111, U. S. N. M.; male, adult, Mount Kilimanjaro, 6000 feet, June 12, 1888; Dr. W. L. Abbott, collector.

Entire upper surface (except wings and tail), sides of head and neck, throat, chest, breast (extending down to a blunt point in the centre), thighs and femoral region, black, with a purplish gloss; sides of lower breast, sides of body, abdomen, and under tail-coverts cream color, somewhat mixed on sides of breast and body with dull black; lesser and middle wing-coverts like the back; greater and primary coverts greenish black edged with a purplish gloss; wings and tail greenish black, with a slight edging of purplish on the outer webs; feathers of both wings and tail rayed or ribbed in certain lights; longer feathers of upper tail-coverts greenish black with slight purplish edges, and rayed when held in proper lights; axillaries dull blackish with a purplish gloss on some of the feathers; edge of wing glossy purplish black; under wing-coverts dull slaty black, with a purplish edging on some of the outer feathers, and a small creamy white spot formed by the tips of some of the middle ones. Length (skin), 6.75 inches; wing, 3.75; tail, 2.80; tarsus, .92; culmen, .70 (.35 from distal end of nostril); first primary (from point of insertion), .82.

This species appears to be very distinct from any one previously described. It at first occurred to me that it might be the male of *P. fischeri*, with which, indeed, Captain Shelley identifies it, but upon referring to the description and colored plate of the latter it is seen that the female of *P. fischeri* has the middle tail feathers and the inner tertiaries green, with a pronounced metallic sheen, in strong contrast with an otherwise dull plumage; the male here

described, on the other hand, has only a slight gloss on these feathers. It is hardly probable the female of *P. fischeri* is more brilliant in any portion of its plumage than the male. In size the present species agrees very closely with the female of *P. fischeri*, but for that matter it is of nearly the same size as *P. leucogaster*, with which it is only distantly related. It is structurally almost identical with the last named bird, but lacks the brilliant metallic color. Compared with a specimen of *P. leucogaster* the bills are almost precisely alike; the tails are very slightly forked; the first primary in *femoralis*, is slightly longer and more rounded at the tip; the third and fourth primaries are longest in *P. leucogaster;* the fourth and fifth in *P. femoralis;* the under tail-coverts are not as long as in *P. leucogaster*.

7. **Laniarius abbotti**, new species.

Type.—No. 119168, U. S. N. M.; male, adult, Mount Kilimanjaro, 5000 feet, October 18, 1889; Dr. W. L. Abbott, collector.

Back, scapulars, rump, upper tail-coverts, wing-coverts, and upper surface of wings and tail green (between oil and olive green), shafts of the feathers black, the secondaries and tail very slightly more olive; tail feathers, except middle pair, very narrowly tipped — mostly on the inner webs — with buffy yellow; wing feathers, except exposed upper surface, brownish black, the inner webs of all (including base of first primary) broadly edged with straw yellow, less pronounced on the tertiaries, and occupying only one-third the length of the second primary, one-half of the third, and increasing on the inner ones; axillaries and under wing-coverts canary yellow. Top of head, nape, sides of neck, and upper back, slate gray, passing somewhat gradually into the green of the back; forehead, lores, line above and below eyes, upper part of cheeks, and ear-coverts, black, passing into the gray of sides of neck, but elsewhere sharply contrasted with adjacent colors; throat, lower part of cheeks, chest, and breast, bright orpiment orange (the feathers bright yellow below the surface), passing into greenish canary yellow on the abdomen; under tail-coverts greenish-yellow like abdomen; sides of body darker; thighs greenish, like back. Length (skin), about 7.30 inches; wing, 3.50; tail, 3.42; tarsus, .97; first primary, from insertion, 1.09. Bill black; feet brownish (in skin); "irides red." The bill is injured by shot and measurements cannot be given; the under mandible, however, measures .40 inch from the mental apex. The feet and tarsi are considerably smaller than those of the few species of *Laniarius* (in its broad sense) now before me, and the first primary is decidedly shorter.

The pattern of coloration is in general so much like that of *L. multicolor* of the *Malaconotus* group (a species not accessible to me except through the colored plate in Gray's 'Genera of Birds'), that I think it must be nearly related to this species. It differs very decidedly, however, as a comparison with the above description will show.

The rictal bristles are weak; the nostrils are rounded and almost entirely hidden by the black feathers at the base of the culmen; nuchal hairs are present. The tail is slightly graduated, the difference in length between the middle and outermost rectrices being .40 inch.

One specimen only of this handsome species was obtained; it appears to be quite distinct from any known species, and it is with great pleasure that I dedicate it to Dr. Abbott, who has labored so assiduously in the last few years to increase the collections of the U. S. National Museum.

8. **Prionops vinaceigularis,** new species.

Type.—No. 118136, U. S. N. M., male, adult; Plains east of Mount Kilimanjaro, October 1, 1888; Dr. W. L. Abbott, collector.

Crest grayish white, only slightly developed; fore crown grayish white, passing into dark vinaceous-cinnamon on the hind crown, this color continuing down on sides of head over ear-coverts, narrowly over eyes to lores, and on cheeks, passing into lighter vinaceous-cinnamon on throat; the color of the cheeks, ear-coverts, superciliary line and lores mixed with white, the latter almost pure in a patch below the eyes; lower throat and rest of under parts white, this color passing up on sides of neck and over nape, where somewhat broken by a black patch continuous with that of the back; back, rump, and upper tail-coverts black, some of the feathers of the latter narrowly edged with buff; wings black, with an oblique, white bar across primaries (except the first), visible only on under side; secondaries and inner primaries tipped narrowly with brownish buff, some of the former also indistinctly edged on outer webs with the same color; wing-coverts black, some of the inner feathers of the middle and greater series tipped with white; alula and primary coverts edged and tipped with whitish buff; under wing-coverts and axillaries black; tail black, middle pair of feathers wholly so, next pair slightly notched with white at tips; three following pairs with increased white terminal notches, and outer pair wholly white on outer web, but basal two-thirds of inner web black. "Feet red; bare skin around eyes green; irides yellow." Wing, 4.02 inches; tail, 3.30; tarsus, .84; culmen, .82.

Two other specimens, females, collected at the same place, October 6, agree with the bird just described, but have a blackish instead of white spot below the eyes, and the black of the back extends up to the crown. One of these females also has a number of dusky blackish feathers scattered on the sides of the crown, and the ear-coverts are prouts brown. The iris and skin around the eye are stated to be 'yellowish green' on one of the labels.

This species seems to agree with *P. cristatus* in not having the conspicuous wing band, formed by the white edges on wing-coverts and secondaries, but I have no specimen of the latter with which to carry the comparison farther. Dr. Sharpe [1] gives the irides of *P. cristatus* as grey, while in the present species they are yellow or yellowish green.

9. **Chloropeta similis**, new species.

Type. — No. 118065, U. S. N. M.; female, adult, Mount Kilimanjaro, 10000 feet, July 29, 1888; Dr. W. L. Abbott, collector.

Upper surface of head, nape, sides of neck, back, scapulars, rump, upper-tail-coverts, lesser wing-coverts, edges of middle and greater coverts, edges of primaries and of tail feathers, and bend of wing, uniform brownish green (between olive and olive green), lighter on rump; wing and tail feathers dark brown; outermost pair of tail feathers edged with yellowish green; under surface, including cheeks, under wing-coverts and axillaries, bright lemon yellow, deeper on bend of wing; line above lores lemon yellow; sides of face, and ear-coverts, like upper parts; sides of breast yellowish green; thighs yellow anteriorly, brownish posteriorly; sides of body with a greenish tinge; inner webs of wing feathers edged with pale buffy yellow. Wing, 2.15 inches; tail, 2.20; tarsus, .90; culmen, .59; first primary, .72.

Four specimens of this bird were collected on Kilimanjaro, at altitudes of 8000 and 10000 feet, during June and July, 1888. Its nearest relative appears to be *C. icterina*, but from this it differs in the wing formula, in smaller size, and apparently in the color of the thighs and upper parts. In *C. similis* the third primary is equal to the eighth, not to the seventh (as in *C. icterina*), nor to the sixth (as in *C. natalensis*). The fourth primary in our bird is equal to the seventh. The first primary is rather broad, and in one example is .89 inch long (exposed portion); in the type it is comparatively short.

[1] Ibis, 1891, 601.

It might naturally be thought that our bird would be *C. massaica* of Fischer and Reichenow, which comes from the base of Kilimanjaro, but this species is said to be nearly related to *C. natalensis;* it is also considerably larger than *C. similis*, and has the top of the head dark brown.

The single male collected by Dr. Abbott is not quite adult, and a female has therefore been chosen for the type.

10. **Melanobucco abbotti,** new species.

Type. — No. 117957, U. S. N. M.; female, adult, Plains of Taveita, July 22, 1888.

Entire head, nape, sides of neck, throat, breast, upper portion of abdomen, under tail-coverts, rump, upper tail-coverts, and entire tail (even concealed portion of base) white, with a faint sulphur yellow tinge on the rump, breast and upper abdomen; sides of breast, sides of body, lower abdomen, and flanks, brownish black, most of the feathers with whitish tips or triangular shaft spots of the same color. Scapulars brownish black, with whitish triangular shaft streaks; back and wings brownish black, the feathers of the former and of the wing-coverts and tertiaries faintly tipped with whitish or pale brown; thighs white, with a slight admixture of brown; under wing-coverts dark brown, with a slight mottling of white; axillaries dark brown; under surface of wings dusky brown, the inner webs of the wing feathers (except first primary) with basal half or more edged with white. Wing, 3.90 inches; tail, 2.26; tarsus, .98; culmen, 1.02.

This bird is closely related to both *M. albicauda* and *M. senex*, but differs from the former in having a white breast and white tail (even to the base), and from the latter in the blackish brown abdomen, sides of body, and scapulars. The three species appear to have the same dimensions.

NEW BIRDS FROM THE ISLANDS AND PENINSULA OF LOWER CALIFORNIA.

BY A. W. ANTHONY.

THE past summer a small collection of birds was made by the writer, assisted by Mr. Horace Gaylord, along the west coast of

Lower California, north of 27°. In advance of a more complete paper on the avifauna of this interesting region the following new species are described.

Carpodacus mcgregori, sp. nov. McGREGOR'S HOUSE FINCH.

Sp. char.— Nearest *C. amplus* but slightly smaller, with more compressed and laterally flattened mandible, longer tail and different coloration; larger than *C. mexicanus frontalis*, bill much larger, its lateral outlines viewed from above, parallel for nearly half the length. Red colors replaced by orange tints.

Type, ad. ♂, No. 7393 coll. A. W. A., San Benito Island, Lower California,[1] Sept. 7, 1896. Above dark olive gray heavily streaked with blackish slate; rump pinkish orange; forehead, superciliary stripe, and malar region orange vermilion; chin, throat and breast lighter, approaching orange chrome; rest of lower parts whitish, heavily streaked with slaty; wings and tail dusky brown, primaries and tail-feathers edged with whitish; wing-coverts edged and tipped with buffy white. Wing, 81 mm.; tail, 73; culmen, 13; depth of bill, 11. Habitat, San Benito Islands, Lower California.

A. Carpodacus amplus.
B. C. mcgregori.
C. C. mexicanus frontalis

I take great pleasure in naming this very strongly marked species in honor of my friend Mr. R. C. McGregor of Palo Alto, Cal., in recognition of valuable assistance he has often rendered me. The basal third of the bill is slightly compressed laterally so that viewed from above the lateral outlines are parallel for nearly one half of the length. A series of from two to four more or less well defined grooves run from the anterior border of the nostril parallel with the culmen nearly to the commissure.

[1] In a note on *Ammodramus sanctorum* (Auk, Vol. XIV, p. 92) Dr. Elliott Coues, places the San Benito Islands in the Gulf of California; their true position is about twenty miles west of Cerros Island — on the Pacific side of the peninsula — or about Lat. 28° 20′, and Long. 115°–35′.

In a large series of *C. amplus* and *C. m. frontalis* I am unable to find either the grooved upper mandible or any approach toward parallel outlines on the basal third of the bill. The rosy colors in *mcgregori* are confined to definite areas, those of the head and rump being especially well-defined, and in none of my specimens is there any rosy suffusion over the upper parts, as is often the case with *C. frontalis*. There seems to be some variation in the intensity of the orange and rosy tints, some males being almost entirely orange over the rump, breast, and forehead, and one bird which escaped me seemed to be clear lemon yellow on those parts.

McGregor's Finch seems to be rather rare but well distributed over the island that we explored, the largest of the group of three. There is very little vegetation on this island, which is little more than a reef less than two (?) miles in extent, and it is rather surprising that a species of this genus should be found there at all.

Thryothorus cerroensis, sp. nov. CERROS ISLAND WREN.

Sp. char. — Differs from *Thryothorus leucophrys* in much shorter bill, flanks less deeply gray, and upper surface darker.

Type, No. 7391, adult, sex undetermined, coll. A. W. A., Cerros Island, Lower California, Sept. 3, 1896.

Above sepia; chin, throat, superciliary stripe and middle of breast and belly grayish white; sides of neck, breast and flanks smoke gray; under tail-coverts grayish white with a buffy tinge, barred with black; tail blackish, middle feathers barred with black and clove brown; rectrices, except middle pair, broadly tipped with cinereous. Wing, 48 mm.; tail, 55; exposed culmen, 11.5; depth of bill, 3; tarsus, 18.

The present species needs comparison with none of our western species of the genus unless it be *T. leucophrys*, from which it is very easily separated by its much shorter bill, as well as other discrepancies in size, as will be seen from the accompaning table of measurements. From specimens before me taken at Rosalia Bay, 55 miles east of Cerros Island, the new species is easily separated by much more extensively gray lower parts, less heavily barred. The lower tail-coverts, and its tail-feathers have a terminal band of gray of not less than 4 mm., whereas the mainland bird

has a semi-obsolete bar of about 1 mm. The middle rectrices are also less plainly barred in the mainland specimen, the bars becoming somewhat obsolete near the shaft.

Cerros Island Wrens were not common at any point on the island, though more were seen about the pine timber on the higher ridges. Mr. L. Belding secured specimens of the species several years ago, but owing to their poor plumage no attempt was made to separate them.

COMPARATIVE MEASUREMENTS.

	Wing.	Tail.	Culmen.	Tarsus.	Remarks.
	mm.	mm.	mm.	mm.	
Thryothorus b. spilurus.	52	57	12.5	17	Rosalia Bay, L. Calif.
T. cerroensis.	48	55	11.5	18	Type of species.
T. leucophrys.	55	60	16	20.5	" " "

Harporhynchus lecontei arenicola, subsp. nov. DESERT THRASHER.

Subsp. char.— Differing from *H. lecontei* in upper parts being darker and grayer, tail blacker and breast gray, tail shorter (?).

Type, ♂, No. 7346, coll. A. W. A., Rosalia Bay, Lower California, Aug. 20, 1896. Above smoke gray; pileum and cervix between drab and broccoli brown; chin and belly white; throat, breast and flanks approaching drab gray; crissum buffy clay color; tail slaty black, each feather marked at tip with gray. Wing, 97 mm.; tail, 136; culmen, 31; tarsus, 30.

The region immediately back from the beach at Rosalia and Playa Maria Bays is a series of wind swept sand dunes, with scarcely any vegetation. A few hardy shrubs and yuccas struggle for existence and afford shelter for quite a number of Thrashers.

A series of sixteen was secured with little effort, though the present race well maintains the reputation of the species for shyness. On several occasions they were seen on the beach, and a few were found inland, where *H. cinereus mearnsi* was more common. They were nowhere so plenty as in the sand dunes

near the surf. Nests were found in the thickest shrubs, that were probably of the present race, proving that they are resident.

As specimens in fresh fall plumage were needed for comparison with the Lower California birds I forwarded a skin to Mr. R. Ridgway who writes me: "A specimen of the same sex of *H. lecontei* from the Mojave River, California, has a shorter wing and *very much* longer tail than your bird."

A comparison of my peninsula birds with a small and unsatisfactory series of typical *H. lecontei* before me, shows the latter to have a slightly longer tail (average), though the wing and other measurements are the same. An immature specimen from the collection of Mr. F. Stephens, taken fifteen miles inland from Point Lobos, Sonora, Mexico, Aug. 19, 1884, is just assuming the fall plumage, which is considerably paler than my Lower California specimens, though darker than any true *lecontei* I have examined.

A PRELIMINARY LIST OF THE BIRDS OF OKANOGAN COUNTY, WASHINGTON.

BY WILLIAM LEON DAWSON.

ANY list of the birds of this region would be unintelligible without a brief survey of the topography and physical conditions. Okanogan County, with an area almost equal to that of the State of New Jersey (being slightly under 7000 square miles), is preeminently a mountain county. The only really level spots in it are the narrow terraces, or benches, which mark former high levels of the Columbia and Okanogan Rivers, with their tributaries. The rest is mountains, low and grass-clad, with scattering pines along the north bank of the Columbia River, which bounds the county on the south; higher and well-timbered in the eastern and central portions; high and rugged in the extreme, with abounding glaciers, in the western part. The drainage is effected principally by five rivers: Wenatchee, Entiat, Chelan, Methow,

and Okanogan, all flowing south-east or south into the Columbia, whose high water mark here is only 600 feet above the ocean. Of these rivers, all but the Okanogan occupy narrow mountain valleys unimportant for migration. The Okanogan River, however, coming from far up in British America, and flowing due south, is a very old stream and has worn out a comparatively broad valley, a mile or so in width, along which there is a considerable movement of birds.

Of the lakes, Chelan is the most remarkable, occupying as it does, through a stretch of seventy miles, a narrow mountain fissure, varying in width from one-half to three miles. This body of water, together with the short, rapid river which drains it, furnishes a winter retreat for the hardier water-fowls, although its precipitous shores offer small inducement to the Limicolæ. Other lakes and water-filled kettle-holes abound, especially in *coulées*, — narrow, rocky defiles once scored out by glaciers. At the lower level these are often alkaline, and little frequented except by Coots and Grebes; but the mountain lakes are of the purest, and attract the Loons and Golden-eyes, while even the water-filled cirques in the highest ranges are sometimes tenanted by alpine forms.

The vegetation of the lower hills and benches, comprises bunch-grass, sage-brush, and scattering pines, while every brook or spring is eagerly surrounded by dense growths of willow, birch, poplar, syringa (*Philadelphus gordonianus*), and wild-rose. As one leaves the semi-arid foothills, and goes up Lake Chelan, and climbs the western ranges, the vegetation becomes very luxuriant, partaking largely of the character of the Puget Sound flora, and so on up to the limit of the trees. One might thus divide the county rudely into two avifaunal regions: the semi-arid, or lower levels, and the mountains proper, or higher ranges. The first division would include all well sunned river valleys, benches, rolling hills, and upland prairies, from 600 feet elevation on the Columbia to the 3500 found in some such districts as those which flank the Okanogan and Methow Rivers. The higher ranges comprise the wilder portions of the west and north, including deep, heavily wooded valleys, whose mean elevation may not really equal certain highland prairies of the semi-arid portion,

but whose faunal character is strictly determined by the enclosing mountains. Thus, Meadowlarks, in a semi-arid district of scattering pines in the center of the county, reach an elevation of 3500 feet, whereas they are not to be found in the Stehekin Valley which opens westward from the head of Lake Chelan at an altitude of only 970 feet. Again *Dendroica auduboni* and *Sitta canadensis*, which are strictly subalpine forms, range down to the water's edge at Graham Harbor — midway on Lake Chelan — whereas we should look for them in vain at twice the elevation on the hills at the foot of the lake.

A residence of fourteen months in this county, June, 1895 to August, 1896, with headquarters at Chelan, a small town at the foot of Lake Chelan, gave me a fair opportunity to study the bird life of the region, and especially since my business required me to travel over 2000 miles on horse back, to all parts except the extensive Indian reservation on the east side of the Okanogan River. In the summer of 1895 and again in 1896, trips were made to the high ranges west of Lake Chelan, Wright's Peak (alt. 9310 feet) being the objective point on both occasions, so that the list of mountain birds is fairly inclusive.

Gulls sometimes visit the lake, but the species were not learned. It is almost certain that many stragglers and rarer residents, notably Buteos and Limicolæ, are unrecorded. Okanogan County is important as representing practically the northern limit of Upper Sonoran forms, and as being the southernmost debatable ground between Pacific Slope and Rocky Mountain trinomials. How much it is affected by Puget Sound 'saturated' forms, it is at present impossible to determine, but there is here a large field for the study of transition forms.

Even such a brief survey would be incomplete without mention of the characteristically mild winter climate of this region. This is, of course, effected by the influence of the Japan Stream, so that the temperature seldom falls to zero in the lower valleys. The warm winds are, moreover, deprived of their superabundant moisture by the western mountains, so that they pass eastward warm and dry. This fact tempts many birds to winter about Chelan, who in any other longitude of their range would have to pass hundreds of miles further south to find as mild a tempera-

ture. During the winter of 1895–96, I recorded 40 species of winter residents near Chelan alone. Below I have recorded in the main list only the results of personal observations, but a few birds, not positively identified, or whose presence is strongly suspected, seemed to make necessary the addition of a small hypothetical list.

1. **Æchmophorus occidentalis**. WESTERN GREBE. — Two females were seen on Lake Chelan on May 11, and six males on the Columbia River on May 19, 1896. The harsh call note of the two sexes is very different.

2. **Colymbus holboellii**. HOLBŒLL'S GREBE. — A familiar bird in every rush-lined pond; easily distinguishable in the breeding season by its gay colors. A set of two eggs was taken June 4, on Wapato Lake, in two and a half feet of water.

3. **Colymbus auritus**. HORNED GREBE. — One bird was seen which spent the winter on the Chelan River.

4. **Urinator imber**. LOON. — Every considerable lake boasts a pair of these birds.

5. **Pelecanus erythrorhynchos**. AMERICAN WHITE PELICAN. — A specimen preserved at Lakeside was secured from a flock on Lake Chelan about five years ago.

6. **Merganser americanus**. AMERICAN MERGANSER.— Found on Lake Chelan, where they breed sparingly.

7. **Merganser serrator**. RED-BREASTED MERGANSER.—Common at Chelan, where they are found throughout the year. These birds frequent the wildest rivers, notably the Methow, and their ability to shoot the rapids while under water is amazing.

8. **Anas boschas**. MALLARD. — Everywhere the commonest of the Anatinæ. It was found at Chelan in December, but probably did not remain during the actual freeze-up.

9. **Anas americana**. BALDPATE.—One flock seen and two specimens secured on Lake Chelan.

10. **Anas carolinensis**. GREEN-WINGED TEAL. — Common up to Dec. 30.

11. **Anas cyanoptera**. CINNAMON TEAL.—Two flocks were seen late in the spring near Lake Chelan.

12. **Aythya marila nearctica**. AMERICAN SCAUP DUCK.— These Ducks, with the four following, regularly winter at Chelan. They spend the nights on the lake, which almost never freezes over, but because the water of the lake is so clear and deep, they pass down early in the morning to feed in the river through the day, if unmolested. The river itself is swift except in a few places, and furnishes little vegetable matter and no shell-fish. This species sometimes flocks with the Golden-eye, and mingles regularly, in winter, with the next.

13. **Aythya affinis**. LESSER SCAUP DUCK.— Occurrence and habits as above.

14. **Clangula clangula americana.** AMERICAN GOLDEN-EYE. — The Whistlers are the characteristic Ducks of this mountain county. This species is not so common as the next, the proportion being perhaps one to three.

15. **Clangula islandica.** BARROW'S GOLDEN-EYE. — Every considerable mountain pool is visited by a pair or more of these birds during the breeding season. In winter they keep to the open lakes and rivers without passing south. Surely there can be no sound more thrilling to the gunner's ear than the clear whistling of this bird's wings, and especially if a pair produce now a single tone and now an ever changing syncopation.

16. **Charitonetta albeola.** BUFFLE-HEAD. — Common, but of more sparing distribution than the two preceding.

17. **Oidemia deglandi.** WHITE-WINGED SCOTER. — Found on Wapato Lake, a small body of water near Lake Chelan, during December.

18. **Branta canadensis occidentalis.** WHITE-CHEEKED GOOSE. — Distributed sparingly throughout the county, where it breeds, especially in the Okanogan Valley. Flocks of two or three hundred are said to have wintered at Wapato's but they did not remain this year during snow-fall.

19. **Rallus virginianus.** VIRGINIA RAIL. — Not common; breeds.

20. **Porzana carolina.** SORA. — Not common; breeds.

21. **Fulica americana.** AMERICAN COOT. — The inevitable accompaniment of 'cat-tails'. In passing along the road through Toat's Coulée, one may see the Coots sitting on their nests, or cackling at play in any of the numerous water-filled kettle-holes.

22. **Phalaropus lobatus.** NORTHERN PHALAROPE. — One specimen was secured on Wapato Lake during the migrations.

23. **Gallinago delicata.** WILSON'S SNIPE. — Only one bird was seen, — at Wapato's.

24. **Tringa minutilla.** LEAST SANDPIPER. — A flock of three was seen at the lower end of Wapato Lake, during the migrations.

25. **Totanus solitarius cinnamomeus.** WESTERN SOLITARY SANDPIPER. — Seen about large streams, notably at Stehekin, at the head of Lake Chelan, where it regularly breeds.

26. **Numenius longirostris.** LONG-BILLED CURLEW. — Not uncommon during migrations, but there is little land suitable for them. A few bred in the open country about Wapato's, while one pair on the Okanogan, chose a nesting site near the stage road, where their incessant querulous cries were poured out against every passer-by.

27. **Ægialitis vocifera.** KILLDEER. — A few were seen in early spring at Wapato's, but it is doubtful whether they lingered.

28. **Dendragapus obscurus fuliginosus.** SOOTY GROUSE. — The spring bird of the lower foothills. They appear to move down from their winter home in the fir-trees of the higher slopes, during the last week in March. At this time, and indeed until after the breeding season, they are quite

unwary. When the young are nearly full grown, the flock begins to retire slowly up the mountain side until the middle of fall, when they are to be found only on the higher ridges. Those, however, whose winter home is on the highest western ranges do not seem to have so much latitude of movement. On August 5 I encountered a brood of full grown young on Wright's Peak, at an altitude of 7000 feet.

29. **Dendragapus franklinii.** FRANKLIN'S GROUSE.— Not nearly so common a bird as the last. It does not apparently range so low as the Sooty Grouse in any given section where both are found; nor on the contrary, I suspect, is it to be found about the higher peaks. On the 28th of April, 1896, I found a nest of this bird at an altitude of about a thousand feet above Lake Chelan. The bird was a close sitter, and her seven eggs were unusually large: 1.98 by 1.83 and 1.94 by 1.35, being the measurements of two average eggs of the set.

30. **Bonasa umbellus togata.** CANADIAN RUFFED GROUSE.— The differentiation of the subspecies of the Ruffed Grouse is not at all clear in this region. In any case the range and habit of the local species is nearly like that of the eastern bird, inasmuch as it frequents copses, springs, and river-bottoms at low altitudes.

31. **Lagopus leucurus.** WHITE-TAILED PTARMIGAN.— This species is reported as not uncommon in the higher altitude. I met with them once on the barren summit of Wright's Peak, at an elevation of about 9000 feet. So far from deserving the name of 'fool hens', applied to them in the winter season, when they may be readily approached, these Ptarmigan in August were excessively afraid and absolutely unapproachable, although it is certain they had never seen a human being before.

32. **Pediocætes phasianellus columbianus.** COLUMBIAN SHARP-TAILED GROUSE.— The common bird in open situations, which yet afford copses and cover,— an invariable accompaniment of stubble-fields, and an habitué of grain-stacks. In portions of the county they are still very abundant, but where hunted they soon become extremely wary.

33. **Zenaidura macroura.** MOURNING DOVE.— Not at all common. Only one nest was found during my stay.

34. **Cathartes aura.** TURKEY VULTURE.— A scattering few are to be found, but it is doubtful whether the county boasts a score.

35. **Circus hudsonius.** MARSH HAWK.— Perhaps a dozen individuals seen.

36. **Accipiter velox.** SHARP-SHINNED HAWK. Several individuals noted.

37. **Buteo borealis calurus.** WESTERN RED-TAIL.— Based on a single specimen, preserved by Ralph Metcalf, near Silver. The Buteos are rare in Okanogan County, but must be common on the Big Bend Plateau, just across the Columbia River.

38. **Archibuteo lagopus sancti-johannis.** AMERICAN ROUGH-LEGGED HAWK.— Only one individual of this cumbrous Hawk was noted.

39. **Archibuteo ferrugineus.** FERRUGINOUS ROUGH-LEG.— Several pairs seen. I found a nest near Chelan, which was occupied by two fresh

eggs on the 10th of April. It was placed 60 feet high on a knob projecting from the face of a perpendicular cliff. The birds were arrant cowards and offered no remonstrance while their nest was being pillaged.

40. **Aquila chrysaëtos.** GOLDEN EAGLE.— Fairly common throughout the county. This Eagle is a familiar feature of our wildest mountain scenery, and is especially likely to turn up after one has killed a mountain goat. One pair breeds within 200 yards of a farmhouse near the Okanogan River.

41. **Haliæetus leucocephalus.** BALD EAGLE.— Comparatively rare. Only three or four individuals were noted during my stay.

42. **Falco mexicanus.** PRAIRIE FALCON.— Next to the Sparrow Hawk, the commonest Raptor. One coulée in particular, which connected two large terrace tops or flats along the Columbia River, and whose walls were beetling cliffs towering a thousand feet high, sheltered half a dozen pairs of these Falcons. The favorite breeding site is some inaccessible niche in a perpendicular rock-wall, which faces some open situation. Except in places where they congregate for sport, the presence of these birds is likely to go unsuspected, until the screaming of the falconets betrays the nesting site.

43. **Falco columbarius.** PIGEON HAWK.— One specimen shot. Probably not uncommon. The relation of this bird to Richardson's Merlin was not satisfactorily determined.

44. **Falco sparverius deserticolus.** DESERT SPARROW HAWK.— Abundant on the lower foothills and in open situations. Less common in the mountains.

45. **Pandion haliaëtus carolinensis.** AMERICAN OSPREY.— Common along the Columbia River and tributary streams.

46. **Asio wilsonianus.** AMERICAN LONG-EARED OWL.— Two or three pairs will be found in any considerable swamp. Eggs were taken in April and in June.

47. **Bubo virginianus saturatus.** WESTERN HORNED OWL. — These birds were seen only at the upper end of Lake Chelan.

48. **Speotyto cunicularia hypogæa.** BURROWING OWL.— Not a characteristic bird, but still to be occasionally met with in the semi-arid and treeless portions at lower levels.

49. **Ceryle alcyon.** BELTED KINGFISHER.— Not a common bird, except on Lake Chelan where it winters.

50. **Dryobates villosus harrisii.** HARRIS'S WOODPECKER.— Not common.

51. **Dryobates pubescens homorus.** BATCHELDER'S WOODPECKER.— Materials are not at hand for the stricter determination of this subspecies. The bird is fairly common.

52. **Xenopicus albolarvatus.** WHITE-HEADED WOODPECKER.— This bird was seen only twice. The last time it was found nesting at an altitude of 3000 feet. There appears to be nothing unusual about its nesting habits, except that in this instance the eggs were all dotted with pitch,

which was probably derived from the chips at the bottom of the nest. The pitch spots were distributed with tolerable uniformity, and had become black through contact with foreign matter.

53. **Sphyrapicus ruber.** RED-BREASTED SAPSUCKER.— One specimen was shot from a fir tree on the shore of the lake.

54. **Ceophlœus pileatus.** PILEATED WOODPECKER. — Not common. Perhaps a half dozen individuals were seen.

55. **Melanerpes torquatus.** LEWIS'S WOODPECKER.— The 'Black' Woodpecker is one of the most characteristic birds of the region. It is, however, pretty closely confined to the lower levels. Every considerable dead tree in the coulées, or along the river banks, is bound to have furnished at one time or another a home for these birds.

56. **Colaptes cafer.** RED-SHAFTED FLICKER.— Common. The careless rancher still calls it 'Yellow-Hammer'.

57. **Phalænoptilus nuttallii.** POOR-WILL. — One specimen secured. This bird seems to take its insect prey on or close to the ground. It is confined to semi-arid regions in valleys and 'draws'.

58. **Chordeiles virginianus henryi.** WESTERN NIGHTHAWK. — Found sparingly in open situations.

59. **Cypseloides niger borealis.** BLACK SWIFT.— These erratic and almost uncanny creatures appeared at Chelan several times during the summer of 1895. They would come in a straggling flock at about 7 o'clock in the morning, hawking at insects as they went, but all coming from up the lake and moving eastward. I saw them only once this year, on June 9. On this occasion I saw a company of a score hunting leisurely at high noon, over the Okanogan River. In the evening of the same day a hundred or so gathered after the manner of Chimney Swifts, to gyrate in social fashion, at a point on the Columbia River, 20 miles south from the first ones observed.

60. **Chætura vauxii.** VAUX'S SWIFT. The only point in the county where these birds were noted, was at the head of Lake Chelan, where they regularly nested and roosted in the hollow limbs of dead balm trees.

61. **Aëronautes melanoleucus.** WHITE-THROATED SWIFT. — A single specimen seen while exploring the cliffs of the Columbia River gorge, seems referable to this species. It was probably a wanderer from some detached colony, recently emigrated to this northern limit of the semi-arid region.

62. **Trochilus alexandri.** BLACK-CHINNED HUMMINGBIRD. — By no means a common bird. Only two glimpses were afforded me of this nimble fay, but my conclusions are confirmed by other observers.

63. **Selasphorus rufus.** RUFOUS HUMMINGBIRD. — Abundant. In certain mountain glades, where fire-weeds abound, these Hummers fairly swarm. They were continually observed in the vicinity of the glacier on Wright's Peak, at an altitude of 8000 feet. In their search for sweets they seem to be attracted by color rather than by odor, for they repeatedly examined a bright check blanket, which a member of our party had, and seemed greatly disappointed that it did not prove to be a flower bed.

64. **Tyrannus tyrannus**. KINGBIRD. — Not nearly so common as *T. verticalis*, but of general distribution along the terraces and lake borders.

65. **Tyrannus verticalis**. ARKANSAS KINGBIRD. — Abundant. You may expect to find a vociferous pair nesting among the out-buildings of any farm-yard. At Chelan some large fir trees along the river front contained several nests apiece.

66. **Sayornis saya**. SAY'S PHŒBE. — This bird is the frequent associate of the Prairie Falcon, preferring to haunt just such cliffs as the nobler bird selects for nesting sites. Here it takes up its station about the middle of March, and it is rarely to be found at any considerable distance from home.

67. **Contopus borealis**. OLIVE-SIDED FLYCATCHER. — Not a common resident even in the higher ranges where it is found, but conspicuous on account of its clear, penetrating note, — *sweé-chew, sweé-chew*, delivered with great energy from a high branch in some fir tree.

68. **Contopus richardsonii**. WESTERN WOOD PEWEE. — This bird is perhaps the most conspicuous species of the fir-clad, precipitous shores of Lake Chelan, for with scarcely an interval along the shore line, its lugubrious notes can always be heard. The breeding range, so far as observed, is confined to the lake shore, where the birds choose some exposed situation, and set a dainty, hempen cup at the fork or foot of a bare limb, preferably of a sapling. Fresh eggs were found as late as July 28.

69. **Empidonax difficilis**. WESTERN FLYCATCHER. — The western Empidonaces are all at home on Lake Chelan. This species was noted only at Graham's Harbor, where it breeds, but it doubtless occurs in suitable localities throughout the county. Note a soft, sibilant, *pis'-wit*.

70. **Empidonax traillii**. TRAILL'S FLYCATCHER. — Abundant in the lower mountain-valleys and coulées. It is the commonest of the Empidonaces wherever found, and was recorded up to 1700 feet. One of its common notes is *pisoó*.

71. **Empidonax hammondi**. HAMMOND'S FLYCATCHER. — Rare. Found chiefly about isolated springs where it is likely to be the only member of the genus present. Its note is a brisk *sewick, sewick*, and at rarer intervals, *switch-oo*, or *swecêhoo*, — the latter harsh and unresonant, and so easily distinguished from the penetrating note of the Olive-sided Flycatcher.

72. **Empidonax wrightii**. WRIGHT'S FLYCATCHER. — Several specimens secured on Lake Chelan. It was found breeding at Graham Harbor and near Stehekin. Note a soft, liquid *swit*. This record extends the northern range of the species.

73. **Otocoris alpestris leucolæma**. PALLID HORNED LARK. — One individual wintered near Chelan. Easily distinguishable from

74. **O[illegible] alpestris merrilli**. DUSKY HORNED LARK. — Found sparing[illegible] the lower bunch grass hills. About 20 individuals were

seen on the Okanogan Flats during the spring migration, but they probably went further north.

75. **Pica pica hudsonica.** AMERICAN MAGPIE. — Abundant. Confined in spring to the coulées and springs, where they breed indifferently in willows and thorn-apples, or the highest pines. In the fall I have found these garrulous free-booters in the mountains at an altitude of 7000 feet. No other birds can thrive where the Magpies flourish, for their annual destruction of eggs and young is simply incalculable.

76. **Cyanocitta stelleri annectens.** BLACK-HEADED JAY. — Not common but of general distribution throughout the county.

77. **Corvus americanus.** AMERICAN CROW. — This bird does not seem to have been subjected to the persecutions which have made life a burden to its eastern brethren, and the result is that it is making a marked increase in numbers. Its cause for continued confidence is further witnessed by the fact that it still seeks low willow saplings for nesting sites.

78. **Nucifraga columbiana.** CLARKE'S NUTCRACKER. — A conspicuous bird of the pine forests, except during the early breeding season, when it is retiring, and cunningly silent.

79. **Molothrus ater.** COWBIRD. — Rare. Only two specimens were seen.

80. **Agelaius phœniceus.** RED-WINGED BLACKBIRD. — Found sparingly in the few suitable localities.

81. **Sturnella magna neglecta.** WESTERN MEADOWLARK. — Everywhere abundant on the lower levels, and found breeding up to 3000 feet.

82. **Icterus bullocki.** BULLOCK'S ORIOLE. — The counterpart of the eastern Baltimore Oriole in habits and general economy. Found commonly where balm trees abound, and by river sides.

83. **Scolecophagus cyanocephalus.** BREWER'S BLACKBIRD. — Sparingly found about the lower end of Lake Chelan and in settled valleys.

84. **Carpodacus cassini.** CASSIN'S PURPLE FINCH. — Seen only along Lake Chelan. A flock of them regularly visited the yard of the little hotel at Stehekin for crumbs.

85. **Loxia curvirostra minor.** AMERICAN CROSSBILL. — A small troop was seen at Stehekin in the summer of 1895.

86. **Leucosticte tephrocotis littoralis.** HEPBURN'S LEUCOSTICTE. — A pair of this rare species were found feeding full-grown young on the moraines just below the glacier of Wright's Peak, at an altitude of 8000 feet. North and west of this station there is an immense area of glacier flanked peaks, where the birds are sure to find a congenial summer home.

87. **Acanthis linaria.** REDPOLL. — Present in thousands during the early winter migrations. Many remain through the season.

88. **Spinus tristis.** AMERICAN GOLDFINCH. — Several large flocks were seen in December, but they are rare in the summer.

89. **Spinus pinus.** PINE SISKIN. — The ubiquitous bird of the higher ranges. In the summer they were plentiful at Stehekin, with an elevation of only 970 feet, and not less common near the mountain summits.

90. **Plectrophenax nivalis.** SNOWFLAKE. — Of irregular occurrence in winter. They are of course confined to the benches and little prairies. A few lingered till March 17.

91. **Poocætes gramineus confinis.** WESTERN VESPER SPARROW. — Not a common species. It is found sparingly in the artemesia of hillsides.

92. **Ammodramus bairdii.** BAIRD'S SPARROW. — Observed in small numbers at Chelan, during both the spring and fall migrations.

93. **Chondestes grammacus strigatus.** WESTERN LARK SPARROW. — A characteristic bird of the sage-covered flats, and the Columbia Valley sands.

94. **Zonotrichia leucophrys intermedia.** INTERMEDIATE SPARROW. — Of this bird my note book of May 14, 1896, says, "The Intermediate Sparrow is by all odds the commonest bird in Okanogan County, at the present writing. The number I have seen today in a thirty mile ride, probably exceeds that of all other birds combined. They are of almost universal distribution, but fairly swarm in wayside coppices." Notwithstanding this abundance, I have no record of any which stayed to breed.

95. **Zonotrichia coronata.** GOLDEN-CROWNED SPARROW. — A few individuals were noted during migrations.

96. **Spizella socialis arizonæ.** WESTERN CHIPPING SPARROW. — The monotonous trill of this lowly sage-bird is a tireless feature of any considerable stretch of open country. Most of the species are born in the sage, live, sing, mate, and die in the sage.

97. **Spizella breweri.** BREWER'S SPARROW. — An obscure Spizellan was caught attempting improvements on the familiar Chipping Sparrow ditty, and was instantly shot on suspicion. It was the only individual noted.

98. **Junco hyemalis oregonus.** OREGON JUNCO. — Like Mr. Rhoads, I prefer to set this Junco down as *oregonus*. It is common at low levels in the winter, but retreats up the mountains as warm weather approaches.

99. **Melospiza fasciata guttata.** RUSTY SONG SPARROW. — Not common. Restricted entirely to swamps, and brush patches along streams.

100. **Pipilo maculatus arcticus.** ARCTIC TOWHEE. — A specimen obtained Feb. 24, 1896, undoubtedly belongs to this subspecies. Through an oversight I failed to determine the standing of the resident bird, which may prove to be either *arcticus* or *megalonyx*.

101. **Habia melanocephala.** BLACK-HEADED GROSBEAK. — Only one individual was seen, in the brush of a spring draw.

102. **Passerina amœna.** LAZULI BUNTING. — These dainty bits of azure are gratifyingly common throughout the county. Any secluded brush patch or overgrown 'slashing' is sure to harbor a pair of them.

103. **Piranga ludoviciana.** LOUISIANA TANAGER. — The 'Louisiana' Tanager is one of the commonest birds in the timber. In spite of its brilliant colors, so well does it harmonize with the evergreen foliage, that its presence would generally go unsuspected, were it not for its telltale *pitic*, or *pititic*.

104. **Petrochelidon lunifrons.** CLIFF SWALLOW. — Only two colonies were found; one, of unmistakable immigrants, was taking possession of a barn near the mouth of the Methow River; the other, consisting of some 400 individuals, might have been occupying the cliffs in the Columbia gorge for several seasons.

105. **Chelidon erythrogastra.** BARN SWALLOW. — Rare. Found only in a cave at the head of Lake Chelan, and in a barn at Malott.

106. **Tachycineta bicolor.** TREE SWALLOW. — Rare. Seen only during migrations.

107. **Tachycineta thalassina.** VIOLET-GREEN SWALLOW. — Abundant in the mountains.

108. **Clivicola riparia.** BANK SWALLOW. — One colony in Chelan comprises 400 individuals.

109. **Ampelis garrulus.** BOHEMIAN WAXWING. — Several flocks of these beautiful birds were seen during the winter of 1895–96.

110. **Ampelis cedrorum.** CEDAR WAX-WING. — Okanogan County is a famous place for cherries and therefore for 'cherry birds.'

111. **Lanius borealis.** NORTHERN SHRIKE. — Several seen during the spring movement.

112. **Lanius ludovicianus excubitorides.** WHITE-RUMPED SHRIKE. — Not infrequent. Breeds.

113. **Vireo gilvus.** WARBLING VIREO. — The resiant genius of birch groves; common.

114. **Vireo solitarius cassinii.** CASSIN'S VIREO. — Perhaps less common than *gilvus*, but having the same general range.

115. **Helminthophila celata lutescens.** LUTESCENT WARBLER. — Not rare. A troop of them were heard singing gaily, while the snow of a belated storm was melting on one of the upland benches.

116. **Dendroica æstiva.** YELLOW WARBLER. — Common, but not abundant except at the foot of Lake Chelan.

117. **Dendroica auduboni.** AUDUBON'S WARBLER. — This trim little Warbler is to be found, not too plentifully, anywhere in the mountains. There seems to be no vertical limit to its range. I encountered these birds on Wright's Peak at an elevation of 8000 feet.

118. **Dendroica occidentalis.** HERMIT WARBLER. — A single specimen was secured in the dense fir forest on Pershall Creek at an elevation of 5000 feet.

119. **Geothlypis macgillivrayi.** MACGILLIVRAY'S WARBLER. — A not uncommon resident in underbrush and tangles. One song heard reminded me strongly of that of a Dickcissel, though, of course, lighter and much less penetrating, *sheep, sheep, sheep, shear, shear, sheep;* or *sheep, sheep, sheep, sheep, shear, sheep.*

120. **Geothlypis trichas occidentalis.** WESTERN YELLOW-THROAT. — Found sparingly in certain swamps and river bayous.

121. **Icteria virens longicauda.** LONG-TAILED CHAT. — This brilliant minstrel was first found piping to the solitary cliffs, which line the

Okanogan River on the north. A few scattering individuals were later noted on the Methow River.

122. **Sylvania pusilla pileolata**. PILEOLATED WARBLER. — A few individuals seen. The bird is likely to escape notice on account of its skulking habits.

123. **Setophaga ruticilla**. AMERICAN REDSTART. — Noted at two points: Silver and Methow City. At the latter place a pair were feeding their young in an alder grove below town.

124. **Anthus pensilvanicus**. AMERICAN PIPIT. — Comes straggling through the county in myriad swarms, during October and November. The spring movement is more rapid and compact.

125. **Cinclus mexicanus**. AMERICAN DIPPER. — Found throughout the length of every mountain stream. In winter many establish themselves along the Chelan River, which is always open, and seem to have among themselves quite well defined beats or stations, which they respect through the season.

126. **Galeoscoptes carolinensis**. CATBIRD. — A rare bird,— found only at the head and foot of Lake Chelan. Only two birds were seen, but a friend, Mr. Chas. Robinson, reports two nests from the foot of the lake.

127. **Salpinctes obsoletus**. ROCK WREN. — Common about all cliff and rock slides of the lightly timbered sections.

128. **Troglodytes aëdon aztecus**. WESTERN HOUSE WREN. — Observed only once, in the central part of the county, where it had built a nest over the door of a rancher's 'shack.'

129. **Troglodytes hiemalis pacificus**. WESTERN WINTER WREN. — Resident in the higher mountains.

130. **Sitta carolinensis aculeata**. SLENDER-BILLED NUTHATCH. — Not common throughout the county, but almost invariably associated with *Sitta pygmæa*.

131. **Sitta canadensis**. RED-BREASTED NUTHATCH. — Fairly common during migrations. Also breeds in the higher mountains.

132. **Sitta pygmæa**. PYGMY NUTHATCH. — Abundant in the regions of scattering pines. Except during the breeding season, they are always found collected in groups of from ten to one hundred. In these alliances, offensive and defensive, they usually include a pair or so of Slender-bills, who vary the monotony of their gentle sibilations by an occasional sharp *quank*.

133. **Parus atricapillus occidentalis**. OREGON CHICKADEE. — Common.

134. **Parus gambeli**. MOUNTAIN CHICKADEE. — Common. Its local range does not seem to be separable from that of *P. a. occidentalis*.

135. **Regulus satrapa olivaceus**. WESTERN GOLDEN-CROWNED KINGLET. — Fairly common. Found in summer in the highest mountains.

136. **Regulus calendula**. RUBY-CROWNED KINGLET. — Fairly common. To hear the dainty rollick of this happy elf is to forget the blues.

137. **Myadestes townsendii**. TOWNSEND'S SOLITAIRE. — Noted several times in midsummer in very diverse situations. Whenever seen it has maintained an imperturbable silence.

138. **Turdus ustulatus.** RUSSET-BACKED THRUSH. — Of uniform distribution in all wooded hollows.

139. **Turdus aonalaschkæ.** DWARF HERMIT THRUSH. — A single pair was found in a dense fir forest on a north slope, at an elevation of 4250 feet.

140. **Merula migratoria propinqua.** WESTERN ROBIN — Common, but nowhere abundant.

141. **Hesperocichla nævia.** VARIED THRUSH. — A single straggler was seen skulking in the low thorn bushes, which line the foot of the lake, in early spring. It was, however, seen once again in midsummer in the higher ranges, where it undoubtedly breeds.

142. **Sialia mexicana occidentalis.** WESTERN BLUEBIRD. — Of irregular occurrence. Ten birds, in a compact bunch, were sighted on the 9th of March, and along through the middle of March numerous individuals were seen mingling freely with *Sialia arctica*. A group of ten were seen again on May 1, but no more were noted during the season.

143. **Sialia arctica.** MOUNTAIN BLUEBIRD. — These exquisites, in their quadruple-extract-of-azure garb, are justly ranked the topmost twig of the American ornithological tree. They pass at their leisure through Chelan and up the Columbia and Okanogan Rivers, in great flocks in the spring, while a scattering few remain to breed.

The following is a brief list of birds imperfectly identified or admitted on inconclusive evidence.

HYPOTHETICAL LIST.

1. **Larus occidentalis.** WESTERN GULL. — One of the Gulls seen on Lake Chelan probably belongs to this species. I believe it might have been found breeding, sparingly, four or five years ago.

2. **Larus philadelphia.** BONAPARTE'S GULL. — Either this bird or *L. franklinii* appeared several times on Lake Chelan during Dec., 1895.

3. **Olor buccinator.** TRUMPETER SWAN. — A pair seen at Wapato's in the spring of 1896 could not with certainty be distinguished from *O. columbianus*. They are said to be not uncommon.

4. **Grus mexicana.** SANDHILL CRANE. — Cranes are abundant during migrations, and are said to breed in the northern part of the county, in the 'lime belt'. I had no opportunity to determine the species. Several years ago an army of crickets invaded the country about Chelan, and immediately large flocks of Cranes appeared, who at once devoted themselves to ridding the land of the pests. The Cranes are said to have passed south following the march of the crickets.

5. **Totanus melanoleucus.** GREATER YELLOW-LEGS. — One bird believed to be of this species was seen flying high over the Chelan River.

6. **Centrocercus urophasianus.** SAGE GROUSE. — I have it on the authority of Mr. G. M. Adams, of Virginia City, that 'Sage Hens' were formerly found on the north bank of the Columbia River near his place.

But since they are such large birds, and find so little of their favorite sage-brush cover, it is doubtful whether any remain in the county at present.

7. **Coccyzus americanus occidentalis.** CALIFORNIA CUCKOO. — Unmistakable Cuckoo notes were twice heard, but the birds were not discovered.

8. **Corvus corax sinuatus.** AMERICAN RAVEN. — Some strange croaks heard and a brief glimpse obtained at Hallowe'en Basin (elevation 6500 feet) entitle this bird to a place on the list of suspects.

9. **Helminthophila ruficapilla gutturalis.** CALAVERAS WARBLER. — A troop of Warblers seen in the spring migration seems referable to this species.

10. **Dendroica nigrescens.** BLACK-THROATED GRAY WARBLER. — I believe I heard a song of this bird above Graham Harbor on Lake Chelan.

DESCRIPTION OF A NEW PINE GROSBEAK FROM CALIFORNIA.

BY WILLIAM W. PRICE.

Pinicola enucleator californica, new subspecies. CALIFORNIA PINE GROSBEAK.

General characters. — "Very similar to *P. e. kodiaka*, but differs in the very much narrower bill, and the less extensive red in the plumage."[1] It differs from *P. e. canadensis* in the much larger, more hooked and less turgid bill, and in the almost entire absence of dark centers to the feathers on the back and scapulars. The difference in size and shape of the bill is as distinct as the difference between *Carpodacus purpureus* and *C. cassini*.

Type, ♂ ad. (No. 3429, Museum Leland Stanford, Jr., University; Pyramid Peak, near Echo Post Office, El Dorado Co., California, altitude about 7500 feet, July 18, 1896; collected by W. W. Price and C. S. Dole). General color light vermilion varying on head to intense vermilion, slightly tinged with yellowish and madder-pink, and changing to ash gray on scapulars, flanks, belly and under tail-coverts. The plumage is everywhere of this color beneath the surface, giving a general appearance of

[1] Mr. Robert Ridgway in letter, to whom a series of the California *Pinicola* was sent for determination.

Dimensions of Adults in Millimeters.

Number.	Sex.	Locality.	Wing.	Tail.	Tarsus.	Chord of Culmen.	Side length, lower Mandible.	Length of Gonys.	Height upper Mand. at Nostril.	Length upper Mand. from Nostril.	Width upper Mandible at base.	Height of Bill.	Remarks.
*7966	♂	Silver Lake, Cal.	115	102	19	15	13	9.8	5.2	11.6	9	10	
1000	♂	Pyramid Peak, Cal.	115	102	20.8	15.1	13	9.7	5.1	11	9	10.2	
1001	♂	" " "	110	94	19.2	14	12.8	9.8	5.2	11	9.8	10	
3429	♂	" " "	119	107	20	14.9	13	10	5.2	11	9.1	10.8	Type.
3430	♀	" " "	108	96	20	15	12.5	10	5.1	11.1	8.9	10	Type.
1004	♀	" " "	111	103	20.5	15.2	13.9	9.9	5.2	12	9	10.2	
1005	♀	" " "	112	95	19.9	15.2	13.2	10	5.4	12	9.5	10	
1006	♀	" " "	115	97	20.5	14.5	13	10	5.1	11	9.1	10.1	
Average of 8 adults.			113.1	99.5	19.9	14.8	13.1	9.9	5.2	11.2	9.1	10.1	
*7588	♂	Hamilton, Canada.	115	100	20.1	13	11	7.8	6.2	10	8.8	11	
3000	♀	" "	106	94	20	14	12.8	9.6	6.3	11.1	9	11	
*7459	♀	Middlesex Co., Mass.	103	98.6	20.5	14	11.2	8.6	6.1	11	9	11.1	
Average of 3 adults.			108	97.5	20.2	13.7	11 6	8.3	6.2	10.7	8.9	11	

* I am indebted to the Californian Academy of Sciences for the loan of these specimens.

seasonal changes or immaturity; the scapulars and feathers of the central back with only the faintest trace of dusky centers; wings and tail dusky, the middle and greater coverts tipped with whitish, tertials edged exteriorly with the same, secondaries, primaries and the tail-feathers faintly edged with grayish.

Type, ♀ ad. (No. 3430, Museum Leland Stanford, Jr., University; Pyramid Peak, near Echo Post Office, El Dorado Co., California, altitude about 7500 feet, July 28, 1896; collected by W. W. Price and C. S. Dole.) General color clear ash gray, the wings and tail markings similar to the male, top and sides of head, back of neck and a few splashes on breast, bright tawny yellow, the posterior upper tail-coverts with a faint wash of the same color.

Young ♂ and ♀ nearly full grown, indistinguishable, similar to the adult ♀, but plumage more tawny gray, the quills and tail-feathers slaty black, the tips of the greater coverts light fawn, the tertials broadly edged with a lighter shade of fawn; the secondaries broadly edged with grayish white, the primaries and tail-feathers narrowly edged with slate gray.

Nestlings scarcely able to leave the nest, very similar to the older young, but with the throat more distinctly tawny, plumage very immature, the first cottony plumules still persisting on the ends of the coverts.

This apparently very distinct *Pinicola* is an inhabitant of the higher Sierra Nevada Mountains of Central California. It is strictly an alpine species; I have never seen it below 7000 feet and I have taken it near timber-line. It is peculiar to the belt of tamarack pine (*Pinus murrayana*), and the beautiful red alpine fir (*Abies magnifica*), and most of the specimens taken were in groves of this latter tree. According to my observations this bird is uncommon, for, during several vacations spent in the higher Sierra, I have met with it only on rare occasions. The first time I saw this Grosbeak was on the evening of August 5, 1892, near Pyramid Peak. I was returning to my camp, along the margin of a shallow alpine lake, bordered by a dense growth of *Abies magnifica*, when a grayish bird flew fearlessly to the edge of the water within a few feet of me. The color was so very similar to that of Townsend's Solitaire, *Myadestes townsendii*, I might in the twilight have passed it for that species, had I not caught a glimpse of its large and heavy bill. I secured it, and to my surprise found it an adult female *Pinicola*, the first I had ever seen from California. I saw no more that summer though I spent over a month in the higher altitudes.

The next time I observed the species was in 1895. I obtained, June 27, a fine male near Silver Lake in Amador Co. (about 20 miles due south of Pyramid Peak), and saw on the same date a female which was evidently its mate. No more were seen in that locality, but in July of the same summer I saw two or three individuals in fir woods on Pyramid Peak, but secured none.

Last summer, 1896, I again visited Pyramid Peak, and was fortunate in getting a fine series of *Pinicola*, 20 specimens in all, and of which all but 4 were available for examination in making the present report. I was assisted in my field work by Mr. C. S. Dole, and Mr. P. O. Simons, and to their efforts is greatly due the large and interesting series.

The greater number of adults were taken on the edges of alpine pastures where salt is placed on fallen logs for stock. The Pine Grosbeak visits these 'salt licks' in company with Cassin's Purple Finch and the Western Evening Grosbeak, and was at all times exceedingly fearless and unsuspicious. The males have a very pleasing song, and hearing it upon one occasion, I thought it resembled the song of *Carpodacus cassini*. Their call-note is not loud and grating like the note of the Evening Grosbeak.

They breed late, as attested by two nestlings brought to me July 29, by a camper, who found them on the lower branches of a fir in a wild glen at the western base of Pyramid Peak, at about 9000 feet elevation. He did not see any nest, nor did the parent birds put in an appearance. The same day Mr. Dole and Mr. Simons each obtained a young specimen, perhaps five days older. These could fly quite easily. On August 3, while collecting in a forest of fir east of Pyramid Peak, Mr. Dole obtained two additional young, which were nearly full grown. The female parent which was feeding them was also secured.

The crop and stomach of an adult contained the soft leaf ends of *Pinus murrayana* and *Abies magnifica*, besides seeds and portions of various insects.

I have taken the following notes from Mr. Belding's 'Land Birds of the Pacific District': "L. B.— Summit, Central Pacific Railroad (Placer Co.), August 11, 1882, tolerably common; from June 23 to July 10, 1885, an adult male and female feeding in alders; during this time these only; but later in August and

September, not rare, in fact rather common. Blood's (Calaveras Co.), July 16, 1880, shot an adult female which probably had a nest; specimen sent to the Smithsonian Institution." [1]

Dr. A. K. Fisher in his report on the birds of the Death Valley expedition,[2] says of this species: "Mr. Nelson saw a fine adult male Pine Grosbeak in brilliant plumage on the head of the San Joaquin River, July 30 (1891). This individual was the only one seen during the year."

I have described this form as a subspecies somewhat in opposition to the canons of the American Ornithologists' Union, for I have seen no examples of intergradation. However, these may be expected from the higher mountains northward, the Sierra form being the most southern representative of the genus.

Unlike the Pine Grosbeaks living in the far north, these birds probably find it unnecessary to migrate any great distance in winter. If the weather is too severe on the alpine summits, they can in a moment drop down into the deep cañons which furrow the western flank of the Sierra, and find a temperate climate and abundance of food.

CRITICAL REMARKS ON *CISTOTHORUS PALUSTRIS* (WILS.) AND ITS WESTERN ALLIES.

BY HARRY C. OBERHOLSER.

THE typical form of *Cistothorus palustris* inhabits the greater portion of the eastern United States and southern British America, west to at least Kansas and Manitoba. Upon the Pacific Coast it is replaced by *Cistothorus p. paludicola* of Baird; while the birds

[1] Land Birds of the Pacific District, by Lyman Belding. Occasional Papers of the Calif. Acad. of Sciences, II, 1890, p. 131.

[2] North American Fauna, No. 7, Pt. II, U. S. Dept. of Agriculture, Washington, 1893, p. 79.

from the intermediate region belong to an apparently undescribed geographical race.

Considered with reference to its western representatives *palustris* presents the extreme of darkness and richness in the coloration of the upper parts and flanks. The Pacific Coast bird is, however, nearly as dark above, though the colors are duller; but the form from the Great Basin is paler than either. In *palustris* the lower parts are usually clearer white, the bill averages longer, the wings and tail shorter than in either of the western races. The eastern bird further differs in having the middle tail-feathers usually without regular or distinct bars, the upper and lower tail-coverts not barred; but no one of these characters is quite constant. In most examples of *palustris* (90 per cent of the specimens examined) the markings of the central rectrices are reduced to mere spots or scarcely indicated bars, being rarely so regular or so clearly defined as in extreme examples of the western races. In 94 per cent of the available specimens of *palustris* the superior tail-coverts are found to be without appreciable transverse markings; while the remaining 6 per cent exhibit fairly well defined bars. The absence of distinct bars on the lower tail-coverts serves to distinguish 71 per cent of the specimens examined, and is apparently a fair average character, though some of the remaining 29 per cent have these markings fully as dark and as clearly indicated as in the most typical examples of the western forms.

Professor Baird, in distinguishing[1] *palustris* from his *paludicola* says of the former, "bill lengthened, equal to tarsus"; but reference to the measurements given in the present paper will at once show the fallibility of this character.

Fall specimens of *palustris* are, as a rule, noticeably darker and more richly colored than those taken in spring or summer, this affecting chiefly the brown portions of the plumage; but in this respect there is at all seasons considerable individual variation.

Among the specimens at hand, most of them from Illinois and from the vicinity of Washington, D. C., much difference exists in the amount of paler color on the pileum. This lighter brown

[1] Review of American Birds, I, 1864, 148.

sometimes covers all but a narrow lateral stripe of normally black, occasionally clove brown, but is sometimes almost absent, being restricted to the central portion of the forehead, the remainder of the pileum being in such case solid black. That this variation is not due to sex may at once be seen by reference to the specimens; and that it is not due to season is equally apparent, since among birds taken in the fall as well as in the spring both these extremes of coloration exist. That a change from brown to black is not produced by the wearing away of the tips of the feathers, as suggested by Dr. Sharpe [1] in connection with *Cistothorus p. paludicola*, is conclusively proved by the fact that many of the birds with most black upon the head are those in freshly molted spring and fall plumages, while a July specimen in worn plumage has the central part of the pileum brown in marked contrast to the black of the lateral portions. These facts seem to indicate that the differences noted are, as mentioned by Dr. Coues,[2] not correlated with any age, sex, or season, but are the result of purely individual variation.

It has for various reasons been deemed advisable to here include a reasonably complete synonymy of the two western forms; and the present writer is responsible for the correct citation of all references.

The type of Professor Baird's *Cistothorus palustris* var. *paludicola* came from Shoalwater Bay, Washington, and is still in the National Museum. Examination shows it to represent the dark Pacific Coast race, for which the name therefore becomes available. No other specific or subspecific designations appear to have been bestowed upon either of the western forms, and the bird from the interior being thus without a name, may be called

Cistothorus palustris plesius, subsp. nov.

Troglodytes palustris GAMBEL, Proc. Acad. Nat. Sci. Phila. III, 1846, 113; NEWBERRY, U. S. P. R. R. Rep. VI, 1857, Zool. 80 (part); SWAINS. & RICH. Fauna Bor.-Amer. II, 1831, 319 (part); HENRY, Proc. Acad. Nat. Sci. Phila. VII, 1855, 309.

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[1] Cat. Birds in Brit. Mus., VI, 1881, 243.

[2] Birds of Colorado Valley, 1878, 179.

Troglodytes arundinaceus GAMBEL, Journ. Acad. Nat. Sci. Phila. I, 1847, 33.

Cistothorus (*Telmatodytes*) *palustris* BAIRD, U. S. P. R. R. Rep. IX, 1858, 364 (part).

Telmatodytes palustris HENRY, Proc. Acad. Nat. Sci. Phila. XI, 1859, 107; COUES, Birds Northwest, 1874, 34 (part); *id.* Birds Colo. Valley, 1878, 178 (part); RIDGWAY, Bull. Essex Inst. V, 1873, 180 (Colorado); DREW, B. N. O. C. VI, 1881, 88; COUES, Key to N. A. Birds, 1872, 87 (part).

Cistothorus palustris SCLATER, Cat. Amer. Birds, 1861, 22 (part); COUES, Ibis, 1865, 164; *id.* Proc. Acad. Nat. Sci. Phila. XVIII, 1866, 78 (Arizona); COOPER, Birds Calif. 1870, 75 (part); ALLEN, Bull. Mus. Comp. Zool. III, 1872, 175 (Utah); AIKEN, Proc. Bost. Soc. N. H. XV, 1872, 196; MERRIAM, Ann. Rep. U. S. Geol. Sur. Terr. for 1872, 1873, 673 (part); GODMAN & SALVIN, Biol. Cent. Am., Aves, I, 1880, 104 (part); A. O. U. Check-List N. A. Birds, 1886, 330 (part); SCOTT, Auk, V, 1888, 165; MERRIAM, N. A. Fauna No. 3, 1890, 100; *id. ibid.* No. 5, 1891, 107; ATTWATER, Auk IX, 1892, 343.

Cistothorus palustris var. *paludicola* BAIRD, Rev. Amer. Birds, I, 1864, 148 (part); BAIRD, BREWER & RIDGWAY, Hist. N. Am. Land Birds, I, 1874, 161 (part); HENSHAW, Ann. Lyc. Nat. Hist. N. Y. XI, 1874, 3; HENSHAW, Geog. & Geol. Surv. W. 100 Mer. V, 1875, 185 (part).

Telmatodytes palustris var. *paludicola* LAWRENCE, Mem. Bost. Soc. Nat. Hist. II, 1874, 268; YARROW & HENSHAW, Rep. Orn. Specs., 1874, 9; HENSHAW, Rep. Orn. Spec. 1874, 41, 74, 101.

Telmatodytes palustris β *paludicola* RIDGWAY, Geol. Ex. 40th. Par. IV, 1877, 425 (part).

Cistothorus paludicola SHARPE, Cat. Birds Brit. Mus. VI, 1881, 242 (part).

Telmatodytes palustris paludicola BREWSTER, B. N. O. C. VII, 1882, 227; ALLEN & BREWSTER, B. N. O. C. VIII, 1883, 155.

Cistothorus palustris paludicola RIDGWAY, Man. N. A. Birds, 1887, 556 (part); A. O. U. Check-List, 1st Supplement, 1889, 16 (part); A. O. U. Check-List N. A. Birds, 1895, 302 (part); MERRILL, Auk, V, 1888, 362; STEPHENS, Auk, VII, 1890, 297; FANNIN, Check List Brit. Col. Birds, 1891, 43; FISHER, N. A. Fauna No. 7, 1893, 136; RIDGWAY, Manual N. A. Birds, 1896, 556 (part).

CHARS. SUBSP. — *Cistothorus C. palustri affinis, a quo differt rectricibus mediis, subcaudalibus et supracaudalibus distincte ac regulariter transfasciatis; corpore superiore, colli capitisque lateribus cum hypochondriis pallidioribus atque paulo canescentioribus; pilei partibus obscurioribus magis restrictis brunneis nec nigris; rostro breviore, alis caudaque longioribus.*

Al., 48–57 (52.5) mm.; caud., 41.5–51 (46.1) mm.; culm. exp., 11–13.5 (12.4) mm.; tars., 17–20 (18.7) mm.

Habitat. — Western United States except the Pacific Coast; north to British Columbia and Alberta, east to the Rocky Mountains and Texas, south into Mexico.

Description. — *Type*, male, adult, No. 114938 U. S. Nat. Mus.; Fort Wingate, N. M., Sept. 24, 1888; Dr. R. W. Shufeldt. Cervix and center of crown bistre brown, rather darker on the former; a streak on each side of crown extending backward to cervix, clove brown; lower cervix, and a triangular patch on interscapulum, broadest anteriorly where spreading out toward sides of neck, black, the feathers of the latter with broad white shaft streaks; remainder of upper parts brown, shading from broccoli brown on the anterior portions of scapulars to reddish raw umber on rump, and to a darker shade of same on upper tail-coverts, which last are distinctly barred with blackish. Middle pair of tail-feathers like upper tail-coverts, and quite regularly barred with black; other rectrices of a similar color, but shading to broccoli brown toward their tips and on their inner vanes, marked with heavy bars of black, which except on outer pair are strongly inclined to be confluent. Wing quills dark olive brown; the superior coverts, together with the indentations and edgings on quills, grayish raw umber, these markings much paler, almost buffy white on the primaries; outer vanes of tertials and roundish spots on external webs of greater coverts, black. Superciliary stripe, and middle portion of under parts, soiled white; lores grayish white; sides of head and neck, with auriculars, grayish white, mixed with buffy; a band across the chest distinctly buffy grayish; sides and flanks pale wood brown; anal region buff; lower tail-coverts dull white, closely barred with deep buff and to a less extent with dark brown.

Young male, No. 82772 U. S. Nat. Mus.; Parley's Park, Utah, July 28, 1869; R. Ridgway. Pileum and post-ocular stripe clove brown; cervix and upper back grayish white, much mottled by the dark brown margins of the feathers; a small spot in center of interscapulum black; remainder of upper parts reddish raw umber brown; tail the same color, though rather paler and grayer towards its tip, regularly barred with brownish black, which color also almost entirely occupies the inner webs of all but the central rectrices. Wings bistre brown, margins of quills and coverts like the back. Sides of neck and head dull grayish white, mixed with brownish; anterior lower parts brownish gray; posterior lower parts and superciliary stripe grayish white, the former with a buffy tinge; sides, flanks and crissum dull buff. "Upper mandible, sepia-black; commissure and lower mandible, pale lilaceous; iris, brown; tarsi, dark sepia-plumbeous; toes, paler, whitish beneath."[1]

This subspecies differs from true *palustris* in the usual presence of regular, distinct and much heavier bars on the two middle tail

[1] Ridgway, Geol. Ex. 40th Parallel, IV, 1877, 426.

feathers, and in its generally barred upper and lower tail-coverts. Though none of these characters are entirely constant, they nevertheless furnish good average distinctions. The first mentioned prevails in 67 per cent; that of barred upper tail-coverts in 71 per cent; and the lower tail-coverts are transversely marked in 90 per cent of the specimens examined, although in many cases the barring, while perfectly evident, is not blackish, but buff. The lower parts in *C. p. plesius* are commonly rather grayer and less purely white than in *palustris*. The bill averages considerably shorter, the wings and tail somewhat longer. The flanks and upper parts, including the sides of neck and head, are much paler and usually somewhat more grayish, this affecting chiefly the brown portions of the plumage. In the shade of these parts fall specimens of *plesius* are very close to some spring and summer examples of *palustris*, but can usually by the other characters be easily distinguished. Comparison of specimens taken at corresponding seasons, however, makes at once evident the differences between the two forms. The lighter brown of the central portion of the pileum averages much paler and more extensive in *plesius* than in *palustris*. There are among the specimens examined none of the latter which have the lighter brown so pale or so extensive as seen in some of the former; and none of this western race have the dark lateral stripes so intense in color as have many examples of the eastern bird.

The most noticeable character which separates *C. p. plesius* from *paludicola* is the much paler color of both the upper and lower parts, this difference being usually most apparent on the flanks, upper surface of the wings, scapulars, lower back and rump. The wings, tail and bill average somewhat longer; and the total length of culmen is decidedly longer than middle toe without claw, which is not the case with *paludicola*. So far as is indicated by the specimens examined, the bars on the middle rectrices of *plesius* average broader and somewhat more regular than in *paludicola*. The area of light brown on the crown averages very much more extensive than in *paludicola*, often reducing to mere lateral stripes the dark brown or blackish color. This difference, as well as the paler general color of the birds from the western interior, was

mentioned by Professor Baird,[1] but was apparently not considered as a subspecific distinction.

The summer specimens of *Cistothorus p. plesius* are all in much worn plumage, but indicate what is borne out by the two spring birds at hand, — that fall birds are, as would be expected, darker and more richly colored, although among the fall specimens there exists considerable individual variation, particularly in the brown colors of the upper parts.

A fall specimen from South Edmonton, Alberta, and one from Fort Brown, Texas, are much brighter tawny above than any of the others examined, but are both very much paler than *palustris*. One example from Fort Klamath, Oregon (U. S. N. M. No. 94757, Aug. 12, 1883), is rather intermediate between *plesius* and *paludicola*, but is perhaps best referred to the former. A November specimen from the same locality is, however, quite typical of *plesius*, having very probably migrated thither from the interior. A bird from Fort Crook, Calif., taken on March 31, is quite typical of the present race, and doubtless represents the breeding form at this place, since at Eagle Lake, Calif., which lies in a similar and neighboring region, *C. p. plesius* has been taken during the summer season. A specimen from Caribou Road, British Columbia, is not perfectly typical of the present subspecies, but somewhat approaches *paludicola* in the generally duller and rather darker shades of the upper parts. In Arizona and adjacent parts of Mexico there not infrequently occur fall examples which in depth of color are clearly intermediates verging towards *paludicola*; but such are usually somewhat nearer the Great Basin form.

Although no Colorado specimens have been examined, *plesius* undoubtedly extends eastward as far as the Rocky Mountains. Whether or not this form breeds in Texas remains yet to be ascertained, as the only specimens at hand are evidently migrants. Very typical examples of *plesius* have been taken at Miraflores, Lower California, and at Mazatlan, in the State of Sinaloa, Mexico, but these excepted, there are available none from Mexico south of the United States Boundary Line. The Long-billed Marsh Wren has been recorded by Mr. Sclater from Tomatlan,

[1] Baird. Brewer and Ridgway, Hist. N. Am. Land Birds, I, 1874, 162.

Vera Cruz,[1] and from near the City of Mexico;[2] but without recourse to the specimens it is impossible to certainly determine to which subspecies they are referrible. The inclusion of Guatemala in the range of the Long-billed Marsh Wren is evidently a mistake, as pointed out by Messrs. Godman and Salvin.[3]

The specimens of *Cistothorus palustris plesius* examined in the present connection represent the following localities, breeding birds being indicated by an asterisk:

Alberta. — South Edmonton.
British Columbia. — Caribou Road.
Washington. — Marshall; Fort Walla Walla.
Oregon. — Fort Klamath; Burns.*
California. — Death Valley; Marysville; Fort Crook; Eagle Lake.*
Nevada. — Ash Meadows; Truckee Bottoms.
Utah. — Ogden; Toquerville; Parley's Park;* Provo;* Provo River.*
Arizona. — Seven miles south of Bisbee; Tucson; Fort Whipple: La Noria (Monument 112 M. B. L.).
New Mexico. — Fort Wingate; Lake Piedra.*
Texas. — Fort Brown; Fort Clark; San Antonio.
Lower California. — Miraflores.
Sonora. — Sonoyta; San Bernardino River (Monument 77, M. B. L.).
Chihuahua. — Lake Polomus.
Sinaloa. — Mazatlan.

Cistothorus palustris paludicola *Baird.*

Troglodytes palustris (?) NEWBERRY, U. S. P. R. R. Rep. VI, 1857, Zool. 80 (part).

Cistothorus (*Telmatodytes*) *palustris* BAIRD, U. S. P. R. R. Rep. IX, 1858, 364 (part).

Cistothorus palustris XANTUS, Proc. Acad. Nat. Sci. Phila. XI, 1859, 191; COOPER, U. S. P. R. R. Rep. XII, pt. II, 1860, 190; (?) SCLATER, Cat. Amer. Birds, 1861, 22 (part); COOPER, Birds Calif. 1870, 75 (part); MERRIAM, Ann. Rep. U. S. Geol. Sur. Terr. for 1872, 1873, 673 (part); GODMAN & SALVIN, Biol. Cent. Amer. Aves, I, 1880, 104 (part); A. O. U. Check-List N. A. Birds, 1886, 330 (part).

Telmatodytes palustris COUES, Birds Northwest, 1874, 34 (part); *id.* Birds, Colo. Valley, 1878, 178 (part); *id.* Key to N. A. Birds, 1872, 87 (part).

[1] Proc. Zool. Soc. Lond., 1856, 290.

[2] Proc. Zool. Soc. Lond., 1864, 172.

[3] Biol. Cent. Amer., Aves, I, 1880, 105.

Cistothorus palustris var. *paludicola* BAIRD, Rev. Am. Birds, I, 1864, 148 (part); BAIRD, BREWER & RIDGWAY, Hist. N. Am. Land Birds, I, 1874, 161 (part); HENSHAW, Geog. & Geol. Sur. W. 100 Mer. V, 1875, 185 (part).

Telmatodytes palustris β *paludicola* RIDGWAY, Geol. Ex. 40th Par. IV, 1877, 425 (part).

Cistothorus paludicola SHARPE, Cat. Birds, Brit. Mus. VI, 1881, 242 (part).

Telmatodytes palustris paludicola COUES, Key to N. A. Birds, 1887, 279.

Cistothorus palustris paludicola RIDGWAY, Man. N. A. Birds, 1887, 556 (part); A. O. U. Check List, 1st Supplement, 1889, 16 (part); A. O. U. Check-List N. A. Birds, 1895, 302 (part); LAWRENCE, Auk, IX, 1892, 357; RIDGWAY, Man. N. A. Birds, 1896, 556 (part).

CHARS. SUBSP. — *Cistothorus C. palustri plesio similis, sed corpore supra et hypochondriis saturatioribus, pilei partibus obscurioribus magis extensis, alis caudaque brevioribus, nec culmine digito medio, ungue excluso, valde longiore, haud difficile distinguendus.*

Al., 46.5–53 (50.1) mm.; caud., 40.5–48 (43.8) mm.; culm. exp., 11.5–12 (11.9) mm.; tars., 17–20 (18.2) mm.

Habitat. — Pacific Coast from Washington to California, south in winter to extreme northwestern Mexico.

Description. — *Type*, No. 7141 U. S. Nat. Mus.; Shoalwater Bay, Washington, Oct. 31, 1854; Dr. J. G. Cooper. Pileum and nucha brown, intermediate between mummy brown and bistre; upper parts generally of similar color, but paler and grayer on scapulars, more reddish on rump and upper tail-coverts, the latter heavily barred with black; lateral stripes on pileum, and large triangular patch on lower cervix and interscapulum, dark clove brown, this patch broadest anteriorly, where reaching to sides of neck, the feathers with conspicuous white shaft streaks. Tail like the rump, becoming hair brown on terminal portions of outer feathers, heavily barred with black, these markings more or less confluent on all but the central pair, the basal portions of inner webs of some of the feathers being almost solidly black. Wings dark olive brown; edgings of coverts and indentations on quills brown, nearly like the scapulars; entire outer webs of tertials and spots on external webs of greater coverts black. Sides of head and neck, with auriculars, light mummy brown mixed with grayish; superciliary stripe, and lower parts generally, dull white with a slight buffy wash, heavily shaded with dull buffy across breast; sides and flanks dull cinnamon; crissum strongly barred with mummy brown, and on longest feathers with black.

The much darker colors both above and below, with the greater extent of the dark portions of the pileum, readily distinguish this coast form from *C. p. plesius*. The bill of *paludicola* appears to be relatively as well as actually shorter, being not decidedly longer

than middle toe without claw; and the wings and tail also average somewhat less.

The most conspicuous characters which separate this subspecies from *palustris* are the presence of regular and distinct bars on the tail-coverts and middle rectrices; these differences, particularly the latter, being not, however, entirely constant. The bill of *paludicola* is much shorter than that of *palustris;* the wings and tail average somewhat longer. The Pacific Coast form is also usually much tinged with brownish below, instead of being nearly pure white as in *palustris*. The upper parts, though almost as dark, are more sooty in color, and while there exists considerable individual variation in the ratio of the light and dark areas on the pileum, yet in none of the specimens is the dark portion so nearly black as in normal examples of *palustris*.

One Long-billed Marsh Wren from Fort Tejon, Calif., and three obtained on the Colorado River, in Sonora, by the naturalists of the Mexican Boundary Commission, are quite typical of *paludicola*, but are evidently migrants.

Specimens of *Cistothorus palustris paludicola* from the following localities have been examined, those taken in the breeding season being designated by an asterisk:

Washington. — Shoalwater Bay.

California. — Marin County; Humboldt Bay; Fort Tejon; San Francisco; Stockton.*

Sonora. — Colorado River, opposite mouth of Rio Hardy.

The difficulties attending identification of the western forms of the Long-billed Marsh Wren have induced the present detailed treatment of the subject. These difficulties, as is so often the case with subspecies, consist in the more or less inconstancy of many of the characters assigned. Specimens frequently occur which do not present all the characters of a particular race; and since such specimens must be identified by the average of characters presented, the necessity for very complete diagnoses becomes at once apparent.

The writer wishes to express to Dr. C. Hart Merriam and to Dr. E. A Mearns his appreciation of their kindness in regard to the loan of specimens; and for the same and other courtesies he

is under especial obligation to Mr. Robert Ridgway, at whose suggestion the preparation of this paper was undertaken.

Comparative measurements of the forms here treated are given below.

COMPARATIVE MEASUREMENTS.

Cistothorus palustris.

	Wing.	Tail.	Exposed Culmen.	Culmen from base.	Tarsus.	Middle Toe.	Middle Claw.
Average of 27 specimens.	48.6	40.2	13.2	14.9	18.8	12.8	5.3
Maximum.	52	46.5	14	16	20.5	14	6
Minimum.	44	34.5	12	14	17	11.5	5
Average of 17 males.	49.8	41.3	13.5	15.1	19.2	13	5.4
Average of 10 females.	46.8	38.3	12.9	14.5	18.3	12.4	5.2

Cistothorus palustris plesius.

Average of 26 specimens.	52.5[1]	46.1[1]	12.4	14	18.7	12.4	5
Maximum.	57	51	13.5	15.5	20	13	5.5
Minimum.	48	41.5	11	13	17	11.5	4.5
Average of 13 males.	53.9[2]	47.4[2]	12.7	14.4	19	12.7	5
Average of 6 females.	50.4	43.9	12.2	13.6	18.5	12.1	4.8

Cistothorus palustris paludicola.

Average of 9 specimens.	50.1	43.8	11.9[3]	13.3[3]	18.2	12.6	5.1
Maximum.	53	48	12	14	20	13.5	5.5
Minimum.	46.5	40.5	11.5	12.5	17	11	4.5

[1] Excludes four in worn plumage.

[2] Excludes three in worn plumage.

[3] Excludes one with bill broken.

THE UNUSUAL OCCURRENCE OF BRÜNNICH'S MURRE (*URIA LOMVIA*) FAR INLAND, WITH NOTES ON OTHER RARE BIRDS.

BY A. W. BUTLER.

THE following notes upon Indiana birds will doubtless be of service, not only to persons interested in the bird-life of that, but also to those who are studying especially the birds of neighboring political divisions. While one may for certain reasons confine most of his efforts to regions circumscribed by man-made boundaries birds do not obey the laws of any commonwealth, nor are they confined within any limits man may set.

A list of the birds of a locality or of any number of localities can only give the knowledge acquired up to its date. Nothing can be prophesied as to the future. A species which has regularly appeared may change this habit. A form which has not before been observed may be noted. The most unexpected may be the thing which happens. Herein I have noted for the first time five species which are additions to the fauna of Indiana. They are *Uria lomvia*, *Macrorhamphus griseus*, *Tringa canutus*, *Buteo borealis harlani*, and *Fregata aquila*.

Uria lomvia. BRÜNNICH'S MURRE.—While at Indianapolis the last week in December, 1896, Prof. W. S. Blatchley, State Geologist of Indiana, told me of a strange bird that had been taken near there. His information was it was some sort of a Guillemot. I learned it had been sent for mounting to Mr. J. E. Beasley, at Lebanon, Ind., and that the same taxidermist had received others. Upon my return home I found a letter from my friend Mr. Ruthven Deane informing me that Mr. F. M. Woodruff of the Chicago Academy of Science had received a Murre from Indiana. A few days later this information was supplemented by a letter from Mr. Woodruff informing me that the specimen was *Uria lomvia*.

In looking over my accumulated mail I found a report from Mr. A. W. Hamilton, Zanesville, Ind., of the capture of a specimen near there. Prof. E. S. Moseley wrote me of the capture of four specimens near Sandusky, O., and Mr. J. E. Beasley, in a note, said he had received four specimens. Thus the total number of records received in a few days was ten. I give herewith data concerning the specimens.

The first specimen mentioned above was brought to Mr. F. M. Noe, a dealer in natural history specimens, of Indianapolis, Dec. 17, 1896, by a

boy who told him that it had been taken alive the preceding Sunday, Dec. 13, near Schofield's old mill, on Fall Creek, about seven miles north of that city. The specimen is now in the collection in the State Geologist's office at the capitol. The specimen reported by Mr. Hamilton was taken by Mr. J. W. Roe of Zanesville, Ind., in the northern part of Wells County, Dec. 18, 1896. It was first observed slowly moving about in an open field and was shot at long range.

On Dec. 28, Mr. J. E. Beasley wrote me that he had in his possession four of these birds from four different Indiana localities. One was the specimen sent by Mr. Noe. Another was brought to him alive by Mr. David Johnson, from Hazelrigg, Boone County, Dec. 18. Mr. A. W. Beck, of Hazelrigg, informs me that it was captured alive about Dec. 15. Mr. Johnson was driving along the road near that town and saw the bird in a field near by. He caught it and kept it two or three days. It was a persistent diver when put into the water; would offer to fight when approached, and did not make much effort to get away. The third bird was sent to him by Mr. J. F. Warner of Fowler, Benton County. Mr. Warner has written me the bird was captured on the road about three miles west of Fowler by a teamster, whose name is unknown to him, about Dec. 20. He adds that he never saw but one other bird of this kind. It was caught near Reynolds, White County, Ind., by Mr. Linck, a night watchman on the Panhandle R. R., in March, 1869. He adds, "it lived three or four days and died in my possession, but was not preserved."

The fourth was received by the taxidermist, about Dec. 20, from Mr. A. C. Littleton, Pickard, Ind. It was caught alive by Mr. Abel Christy, about three fourths of a mile north of that place, Dec. 10, and was kept alive until it was sent to be mounted, but died on the road.

Prof. E. L. Moseley, Sandusky, O., informs me that the four specimens he reported were taken within 20 miles of Sandusky, Dec. 19, 1896.

A fine adult male was taken by a twelve year old boy on the Iroquois River, Iroquois Township, Newton County, Ind., one and a half miles from Foresman, near what is known as the old Indian ford, Dec. 31, 1896. It was shipped to a firm on South Water Street, Chicago, where Mr. F. M. Woodruff obtained it, and it is now in his collection. He obtained the information given above from the postmaster at Foresman, Ind., and kindly sent it to me.

The 'Bulletin' of the Michigan Ornithological Club, January, 1897, p. 10 refers to a Murre identified as *Uria troile*, which Mr. N. A. Wood informs me is shown by reëxamination to be *Uria lomvia*. The specimen is an adult male and was shot from a flock of several near Gibralter, Mich., Dec. 26, 1896, by some duck hunters. The specimen is, I understand, in the museum of the University of Michigan at Ann Arbor. In the same publication, on page 8, is a reference to two "Black Guillemots" taken at the St. Clair Flats near Detroit, Mich. From a letter received from Mr. W. A. Davidson, Detroit, Mich., I gather that one of the two birds noted is in the possession of Mr. C. Havens of that city. The other

belongs to a lighthouse keeper, whose name he does not know, at the St. Clair Flats. Evidently both specimens are *Uria lomvia*. It is possible a careful examination of the specimens will show that these also belong to this species.

Brünnich's Murre has, as I have been informed, been reported the present winter from other interior localities. It has I believe, however, never before been authentically reported far from the ocean. Mr. Robert Ridgway informs me that they have this winter ranged down the Atlantic coast as far as South Carolina. It would seem probable that some storm had driven them far out of their usual range. Evidently those noted herein were carried inland and dispersed about the same time, perhaps by the same storm. They were all taken within a few days. Only twenty-one days elapsed from the date when the first was obtained until the last was in the hands of a naturalist. This is its first record from Indiana, except that reported by Mr. Warner which, unfortunately, is not verified by the specimen. It will be of interest to hear of other records of the occurrence of this species inland. It will be noted that there is a specimen preserved in a public museum in Indiana and in Michigan to verify the records from those States. It is to be hoped that one of the Ohio specimens may be secured for a like purpose.

2. **Numenius longirostris.** LONG-BILLED CURLEW. — Last fall there was a specimen of this bird in the store of Mr. Fletcher M. Noe, Indianapolis, which he informed me was taken by Mr. Herman Eckert, Apr. 2, 1896, in a swamp near Jasper, Dubois County. Mr. Frank M. Woodruff, notes a specimen from Liverpool, Ind., in his collection, in 'The Auk' for April, 1896, p. 181.

3. **Macrorhamphus griseus.** DOWITCHER. — Mr. F. M. Woodruff writes me that he has a bird of this species in his collection taken at Liverpool, Ind., Sept. 9, 1892. When shot it was flying alone over the Little Calumet River. First Indiana record.

4. **Tringa canutus.** KNOT. — To Mr. F. M. Woodruff I am indebted for the first record of its occurrence in Indiana. He informs me that he found a single specimen in a flock of Sandpipers on the beach near Millers, Lake County, Indiana, Aug. 24, 1896. The specimen is "in the light grayish juvenile plumage, with scale like markings on the back of pure white."

5. **Tringa bairdii.** BAIRD'S SANDPIPER. — The first specimen of Baird's Sandpiper, so far as is known, that was taken in Indiana was obtained by Mr. W. O. Wallace at Wabash, Ind., Aug. 26, 1893. Mr. Woodruff writes me that among a flock of Sandpipers seen at Millers, Ind., Aug. 24, 1896, there were several, probably five, of these birds. From Michigan there are but two records (The Auk, April, 1896, p. 174 and July, 1896, p. 225). From Ohio there are perhaps a half dozen records (Wheaton, Birds of Ohio, 1882, p. 473–475).

6. **Ampelis garrulus.** BOHEMIAN WAXWING. — Mr. J. E. Beasley, of Lebanon, Ind., who formerly lived in Indianapolis, says about forty years

ago, one spring, he took 19 Bohemian Waxwings in one day near the latter city. They were in one flock and were flying forward and backward over White River catching insects after the manner of Flycatchers.

7. **Ionornis martinica.** PURPLE GALLINULE. — Prof. E. L. Moseley informs me of the capture, near Sandusky, O., of a Purple Gallinule April 28, 1896. Although it has several times been reported from that State, I believe this is the first time its capture in the vicinity of Lake Erie has been noted.

8. **Buteo borealis harlani.** HARLAN'S HAWK. — Mr. R. B. Williams, Lebanon, Ind., has in his possession a fine specimen of this Hawk. It was shot and its wing broken, by Mr. W. H. Moler of the same city, in Perry Township, Boone County, Indiana, in September, 1887. He brought it while it was alive to Mr. Williams, who mounted it. This is the first record of the Black Hawk from Indiana. In Illinois, Mr. C. K. Worthen shot one of a pair on the Mississippi River near Warsaw, Hancock County, in 1879. I have in my collection the skin of a specimen taken several years ago by Mr. W. S. Everhart of Toledo, Cumberland County, Ill., in that county, and by him presented to me.

9. **Fregata aquila.** MAN-O'-WAR BIRD. — I had the pleasure last fall of examining in the office of Mr. J. E. Beasley, the well known taxidermist at Lebanon, Ind., a fine specimen of a young male of this species. It was killed by Mr. W. S. Patterson, near Shelbyville, Ind., July 14, 1896, and the next day was received by Mr. Beasley. The following are the measurements taken from the mounted specimen. Length, 36 in.; wing, 24 in.; tail, 16 in.; depth of fork, 7 in.; bill, 4.25 in. This is the first record for Indiana. The only other record for the Ohio Valley is a specimen taken in Fairfield County, O., in the spring of 1880 (Davie, Nests and Eggs of N. A. Birds, 1889, pp. 59, 60).

DESCRIPTION OF A NEW SPECIES OF GUILLEMOT FROM THE KURIL ISLANDS.

BY LEONHARD STEJNEGER.

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WHILE visiting some of the Middle Kuril Islands during the summer of 1896 I was much puzzled by a black-winged Guillemot, which at first I mistook for Pallas's *Cepphus carbo*, especially

since the Kurils have been given as the particular habitat of this black-winged species. I soon found, however, that not only the pale eye ring of the latter was absent but also that the proportions were entirely different, in fact that I had to deal with an undescribed form more nearly related to *Cepphus columba* than to *C. carbo*. The latter I did not see at all in the Kurils. The many puzzling and contradictory statements regarding Kuril Islands specimens by Blakiston and by Seebohm have thus received an easy and satisfactory solution.

It gives me great pleasure to name this species for Capt. H. J. Snow, of Yokohama, the distinguished explorer of the Kuril Islands.

Cepphus snowi, sp. nov.

Diagnosis. — No white area surrounding the eye; wings entirely black, or with narrow white tips to the larger coverts, forming at most three narrow white bands; under wing-coverts smoky gray; black of back with a slate-colored gloss; 14 tail-feathers.

Habitat. — Kuril Islands.

Type. — U. S. Nat. Mus. No. 159,351. Raikoke Island, Kurils, August 23, 1896. L. Stejneger coll. no. 7009.

Dimensions of Type: — Wing, 181 mm.; tail-feathers, 54 mm.; exposed culmen, 32 mm.; height of bill at nostrils, 10.5 mm.; tarsus, 33 mm.; middle toe with claw, 46 mm.; total length, 344 mm.

In addition to the type I collected 3 other specimens on the Mushir Rocks. I have also examined two specimens from Urup in the Science College Museum, Imperial University, Tokyo, through the kindness of Dr. Ijima. I remember also to have seen a specimen in the American Museum of Natural History in New York, said to have come from Kamchatka. It was probably collected by Capt. Snow. When I examined this specimen many years ago I took it to be a melanistic individual of *C. columba*.

GENERAL NOTES.

Murres in Western New York. — Writing from Geneva, N. Y., Mr. L. Clark states that a specimen of *Uria lomvia* was killed on Seneca Lake, December 23, 1895, a second in May, 1896, and a third on December 26, 1896. He also reports that J. S. Baker, a taxidermist at Geneva, has had several specimens of the same species brought him by hunters for mounting and that numbers had been seen on the lake during the winter of 1896. Previous to December 1895, the bird was not known to occur.— FRANK M. CHAPMAN, *American Museum of Natural History, New York City.*

Unusual Occurrence of Brünnich's Murres at Beverly, New Jersey. — During the occurrence of the heavy gale which prevailed along the coast about the middle of December, 1896, great numbers of Brünnich's Murres were seen and shot at different points along the Delaware River. On the 15th a boy shot one from the shore at Edgewater Park, the skin of which was preserved. The next morning I witnessed several flocks of fifteen or twenty birds each flying up the river, and secured two specimens. During the afternoon they returned in scattered flocks numbering about three hundred. A flock flew over my boat while crossing the river, low enough to have been struck with an oar. Those which remained about the river during the day to feed, were quite tame, and could be easily approached without alarm. One was also shot further down the river at Palmyra, and I was informed, several above Burlington. — J. HARRIS REED, *Beverly, N. J.*

Brünnich's Murre (*Uria lomvia*) **at Newberne, N. C.** — While in eastern North Carolina during the holidays I secured a specimen of Brünnich's Murre at Newberne. It was killed in the river near there the 22d or 23d of December. To make more sure of its identification I sent a description of it to Mr. Robert Ridgway who replied that my specimen is *Uria lomvia*. I can find no record of it having been taken in the State before. — T. GILBERT PEARSON, *Guilford College, N. C.*

Brünnich's Murre and King Eider at Cape Charles, Virginia. — Two specimens of Brünnich's Murre (*Uria lomvia*) were taken at Cape Charles, Virginia, and six others seen, Dec. 17, 1896. At the same locality, on Jan. 2, 1897, a King Eider (*Somateria spectabilis*) was taken. I exhibited the King Eider and one of the Murres at a meeting of the Deleware Ornithological Club, at the Philadelphia Academy of Natural Sciences. As far as I can ascertain, this is the most southern recorded capture of the King Eider. — WILLIAM L. WHITTAKER, *Cedar Grove, Philadelphia, Pa.*

Uria lomvia in South Carolina. — My young friends Rowland and Herbert Nowell have sent me a specimen of Brünnich's Murre taken near Anderson, S. C., Dec. 19, 1896. Anderson is the seat of the county of the same name, in the extreme northwestern portion of the State, lat. about 34° 36′ N., long. 5° 38′ W. from Washington, not far below the Blue Ridge, and about 196 miles from the nearest point on the sea-coast, which would be in the vicinity of Beaufort. The bird was captured about three miles southwest from the city, in an open field near a creek. It was found by a hunting dog, which pointed it and then ran up to it; the bird pecked at the dog, and also at the man who came to pick it up. It could not fly, though it showed no bruises or evidences of injury when, having been kept alive till the 23d, and fed on raw meat, it died and was skinned. The specimen is a bird of the year, identical with various others I have compared in the U. S. National Museum. Bill black, small, perfectly smooth, with a rather sharper gonydial angle than usual; eyes brown, feet light brown. Length 15.75; extent 28.75; wing 7.70; tail 2, rounded; culmen 1.20; gonys 0.63; height of bill 0.42; width 0.27; tarsus 1.30; middle toe and claw 1.96. (Fresh measurements by the Messrs. Nowell.) Plumage as usual for this age and season.

This is, I think, the first record of the species for South Carolina. The individual is one of what must have been a large flight of these birds about the middle of last December. 'Forest and Stream' of Feb. 6, 1897, notes one taken Dec. 17, 1896, and another Dec. 19, 1896, both at Cape Charles, Va., where also was a King Eider taken Jan. 2, 1897. I hear of a number of other cases of Brünnich's Murre beyond its ordinary range about this time; some of them will doubtless reach 'The Auk' with this one. On looking up the weather record, I find that there was an area of atmospheric depression at Charleston, S. C., at 8 A.M. of Dec. 15; it travelled rapidly northeastward on the 15th and 16th, and was severe along the coast from N. C. to Maine on the night of the 15th, on the 16th, 17th, and part of the 18th. This storm-center evidently caused the dispersion of comparatively large numbers of northern sea-birds inland, far beyond their normal flights. — ELLIOTT COUES, *Washington, D. C.*

The Terns of Dyer's and the Weepecket Islands. — On June 23, 1896, I landed on Dyer's Island in Narragansett Bay, a small island of some twenty acres in extent and covered on the lowlands with beach grass and on the uplands with blackberry (*Rubus canadensis*) and bayberry (*Myrica cerifera*).

Before landing I could see a few Terns hovering above the island; there proved to be, however, some ten pairs inhabiting it, as a number of counts made twenty birds in the air after I landed, and I believe that they do not wander far during the day.

The Terns were all Wilson's (*Sterna hirundo*), and I found but one nest on the island, which contained three eggs; it was a typical nest, — a few grasses on the sand amid the beach grass. The eggs would have hatched

in another two days. This small colony has inhabited the island for a great many years and as they are not disturbed will undoubtedly continue to do so. It is the only colony in Narragansett Bay.

On June 27, 1896, I visited the Weepecket Islands in Buzzard's Bay. There are three islands in this group — Great and the two Little Weepeckets. I landed first on the most eastern of the two little ones, an island of about an acre in extent. This island has been slowly cut away by the action of the sea until now it presents a plateau-like appearance, some ten feet high, surrounded by a narrow rocky shore. Although as I approached the island at least fifty Terns arose from it, I found but three nests, all containing two eggs each; these nests were placed on the edge of the plateau and were quite well hidden among grass and poison ivy (*Rhus toxicodendron*).

The Roseate Terns (*Sterna dougalli*) were apparently the only inhabitants of this island, their long tail-feathers, bills, and harsh cries, beside the appearance of the eggs, proved their identity.

I next landed on the other Little Weepecket, an island resembling almost exactly its neighbor in size, topography, etc., and from which rose about the same number of Terns; however, there proved to be a few Wilson's in addition to the prevailing species, the Roseates, inhabiting this island, as was proved by my finding a typical set of three eggs on the beach above tide water. Three other nests were found, all Roseates (?), and containing two eggs each; one of these was on the beach and the other two along the edge of the plateau and buried among scrubby poison-ivy which covered thickly and entirely the whole crest of the island. The two sets on the beach were perfectly fresh.

It was not until June 30 that I landed on Great Weepecket, the most western of the three islands and of some twelve acres in extent. Its uplands are covered with scrub sumac (*Rhus copallina?*), low barberry, blackberry, mullein (*Verbascum thapsus*) and yarrow (*Achillea millefolium*), and beach grass (*Ammophila arundinacea*). The southeastern shore of the island is a continuous beach, while the northwestern side is a steep bank cut away by the action of the sea. The southerly and northerly ends of the uplands are composed entirely of sand and covered with a sparse growth of beach grass. These sandy points, and in fact almost all the upland, are inhabited by a great many mice and their runways are to be seen in every direction. I was unable to get any specimens for identification. Beside a few Song Sparrows (*Melospiza fasciata*), Spotted Sandpipers (*Actitis macularia*), a nest of which contained four hard set eggs, and a pair of Kingfishers (*Ceryle alcyon*), whose nest my companion dug out and found to contain eight pin-feather covered young, the Terns were the sole inhabitants of the island.

I checked off the eggs on the uplands and found, two nests containing no eggs; three nests containing one egg each; seven nests containing two eggs each; twelve nests containing three eggs each; one nest containing four eggs, and one dropped egg, and one Wilson's chick (?) in down.

On the beach I found three nests containing one egg each; two nests containing two eggs each; three nests containing three eggs each; total thirty-five nests, two empty, one containing a chick, six containing one egg each, nine containing two eggs each, fifteen containing three eggs each, and one containing four eggs, and one dropped egg, — seventy-four eggs all told.

The nests on the uplands were in almost every case placed near or at the base of the scattered boulders, and on the beach on the sea weed. The colony consisted of perhaps two hundred Terns, the majority Roseates; but as the Terns on the three islands all gathered over one when walking about the island, and others are off fishing, a correct estimate is impossible. As far as I could ascertain there were no Arctics (*Sterna paradisæa*) breeding on the islands.

The whole Weepecket colony, including the three islands, had therefore forty-two nests and eighty-nine eggs on them.

In 'The Auk,' Vol. IX, 1892, page 226, in an article entitled 'Habits of the American Herring Gull (*Larus argentatus smithsonianus*) in New England,' by Mr. George H. Mackay, there is an account of a nest of the Herring Gull having been found on the middle Weepecket Island, though I believe this record may be questioned.

Through the kindness of Mr. Edward Sturtevant I was enabled to land on these islands. — Reginald Heber Howe, Jr., *Longwood, Mass.*

The Nostrils of Young Cormorants. — Acting upon a suggestion recently made by Mr. Frederic A. Lucas (Auk, XIII, p. 172), I examined on July 16 a very large colony of Farallone Cormorants nesting on San Martin Island, Lower California, to ascertain, if possible, at what age the nostril becomes closed.

This colony had been so often disturbed by the guano schooners that even at this late date many nests contained fresh eggs; while young birds, ranging from those but just hatched to nearly full grown, were found by thousands.

In the newly hatched young, which were blind, the nostril was a mere slit, scarcely noticeable, but those a few days old showed a well developed orifice, which exhibited no sign of closing in the largest young I could find, nearly as large as their parents, but not half fledged.

As the Cormorants were driven from their nests a horde of screaming Western Gulls, which followed us all about the island, swooped down upon the nests carrying off eggs or young, as they might happen to contain. A preference was shown for squabs but a few days old, which were instantly swallowed whole.

So great was the destruction caused by our presence that I withdrew from the nesting ground sooner than I otherwise would have done.

At some distance from the Cormorant rookery I found a three-quarters grown Western Gull endeavoring to swallow a young Cormorant that had doubtless been brought by the old Gulls from some of the nests I had but just visited. — A. W. Anthony, *San Diego, Cal.*

The Canvas-back Duck in Massachusetts. — Four specimens of this species (*Aythya vallisneria*), two of each sex, were shot in Silver Lake, Pembroke, Plymouth County, Dec. 18, 1896, from the stand of Mr. Thomas Arnold of North Abington. I have seen a pair of them that he has had mounted. There were five in the flock. Mr. Arnold authorizes me to report this capture.

A single Canvas-back, a male, was seen by Mr. J. E. Bassett in Nippenickett Pond, Bridgewater, Nov. 26, 1896, accompaning two Dusky Ducks (*Anas obscura*). The three swam almost within gunshot of the stand, allowing a protracted scrutiny of them through a field glass, and another later in the day. Mr. B. has shot hundreds of Red-heads, and at once saw that this was a different bird, and described to me all the characteristics of *A. vallisneria* with perfect accuracy. These, with other reported occurrences, indicate a phenomenal flight of the species in Massachusetts in the late fall of 1896. — HERBERT K. JOB, *North Middleboro', Mass.*

Type Locality of Fuligula collaris. — It has sometimes happened in the annals of ornithology that a species has been discovered or first described from a locality remote from its subsequently ascertained normal range — I do not mean by mistake, such as that which originated *Picus cafer* for a Mexican bird, supposed to be South African, but from actual capture of an individual far from its proper habitat. We have a striking case of this happening to Barrow's Golden-eye, properly a North American bird, of only casual occurrence in the locality whence its name *islandica* is derived. In fact, the original appearance of this bird in print is as the *Clangula* of Brisson, Orn., 1760, VI, p. 416, pl. 37, fig. 2, where it is incontestably described and figured, along with a copious synonymy of the Common Golden-eye or Garrot, which Brisson thought he had in hand, though his bird was actually a Barrow's Golden-eye, in the Réaumur Cabinet. This is clear from the description of the white eye-spot, which Brisson says is "*versùs synciput in acumen producta*" — runs up to the forehead in a point, and his plate shows the point plainly. Another case, which it is the object of this note to explain, is the original naming and describing of the Ring-necked Duck from a British-killed individual, far from its normal range, in one part of which, however, the bird had before been actually discovered. As is well-known, *Anas collaris* of Donovan was first named and published in 1809 (Brit. B. VI, pl. 147), upon a specimen taken in England (found fresh in Leadenhall Market, if my memory serves me rightly). But before that date, near the mouth of the Columbia River, this species was discovered by Lewis and Clark. It is described with unusual particularity by them, in the orig. ed. of Biddle's History of the Expedition, Vol. II, 1814, p. 195; but the description as then rendered was so mangled by the ostensible editor, Paul Allen, that it became almost unrecognizable, and it was not until I examined the explorers' original MSS. that what they meant was made clear: see my ed. of 1893, p. 888. The bird was killed by one of their men at Deer Island

in the Columbia, a little below the mouth of the Willamette, March 28, 1806; and the description in full is found in Codex Clark Q 81–83, Codex Lewis K 10. This is unmistakable. The bird is smaller than the duckinmallard (*Anas boscas*); head and neck purplish-black; belly and breast white; flanks of a pale dove-color with fine black specks; beak remarkably wide; . . . "a narrow stripe of white garnishes the base of the upper chop; this is succeeded by a pale sky-blue color, occupying about an inch, which again is succeeded by a transverse stripe of white, and the extremity is a fine black," etc. This is obviously diagnostic of *Fuligula collaris*, even though no mention is made of the orange-brown collar, which was either overlooked, or not developed in the specimen handled. I have of course set forth the case in my work as cited, but this note will serve to throw it into the current of ornithological literature, to which the celebrated History does not distinctively pertain. No question of nomenclature is raised; the matter is simply historical. — ELLIOTT COUES, *Washington, D. C.*

Dafilula, a New Subgenus. — Type *Querquedula eatoni* Sharpe, Ibis, 1875, p. 328, Kerguelen Island. — ELLIOTT COUES, *Washington, D. C.*

The Lesser Snow Goose in New England. — I have lately added to my collection three New England specimens of the Lesser Snow Goose (*Chen hyperborea*); one taken at Toddy Lake, Maine, October 4, 1893, by Mr. Alvah G. Dorr of Bucksport, Maine, another at Lake Umbagog, Maine, October 2, 1896, by Mr. Charles Douglass, the third at Ipswich, Massachusetts, October 26, 1896, by a local sportsman who sent the bird in the flesh to Mr. M. Abbott Frazar of Boston. The specimen first named was not sexed; the other two birds were males. All three are young in fresh antumnal plumage and all are prefectly typical examples of *hyperborea* which, evidently, is of much commoner occurrence in New England than the large form *nivalis*.

The Umbagog specimen was accompanied by a young Blue Goose (*Chen cærulescens*) which was also killed, both birds coming into my possession less than an hour after their death. — WILLIAM BREWSTER, *Cambridge, Mass.*

Branta bernicla glaucogastra. — While I was in London in 1884 I examined with Mr. Seebohm his collection of Brant Geese, and was favorably impressed with his view that there are three recognizable forms, two of which occur in North America, though neither of these is the ordinary Brant of Europe. We have the two extremes of the White-bellied and Black-bellied, between which typical *B. bernicla* is intermediate. It is probably because we have only compared these extremes that we have found *B. nigricans* so decidedly different from what we call *B. bernicla*. The stock is one of the most thoroughly circumpolar of all birds, perhaps more decidedly hyperborean than any other excepting

Rhodostethia rosea; it breeds only within the Arctic circle, and even beyond lat. 82°. The Brant stock has differentiated along three lines, now recognizable, and fairly well represented in different longitudinal areas. The most distinction has been acquired by *B. nigricans*, in which, besides the black belly, there is a large and nearly complete white collar, shown by neither of the other two; in other words, the Black Brant buttons its collar in front, and wears a black vest. This is probably a specific character. Waiving the question of taxonomic rank, I wish to call attention to the fact that, as shown by Mr. Seebohm (Hist. B. B., VI, p. 508, 1885), two races of *B. bernicla* are distinguishable, and ours is the one which needs a name. It is true that the difference between them is not great, and not strictly correspondent with geographical distribution; and that Salvadori makes no distinction (Cat. B. Br. Mus., XXVII, 1895, p. 119). But a difference does exist, it is to some extent geographical, and I could name perhaps fifty birds in the A. O. U. List with no better claim to recognition by subspecific name. The white-bellied bird, largely or mainly North American, is *Bernicla glaucogaster* Brehm, Isis, 1830, p. 996, *nomen nudum; B. brenta, a. glaucogaster* Bp., C. R., 1856, p. 648; and *Anser brenta glaucogaster* Seebohm, *l. c.*, where the distinction is pointed out in the following terms: "In the Taimur peninsula, in Nova Zembla, Franz-Joseph Land, and Spitzbergen typical *Anser brenta* breeds, having the under parts generally as dark as those of the Pacific species [our *B. nigricans*], but with the white on the sides of the neck not meeting in front. In Arctic America, from the west coast of Greenland as far west as the Parry Islands, and north of lat. 73° as far as land is known to extend, the white-bellied form of the Brent Goose (*Anser brenta glaucogaster*) breeds; it has the underparts below the breast almost pure white and the white on the sides of the neck does not meet in front. Both the two latter races and intermediate forms between them occur on our [British] coasts; but the white-bellied form is much the rarer of the two." This is in substance the evidence upon which I propose that we recognize *Branta bernicla glaucogastra* in the A. O. U. List. — ELLIOTT COUES, *Washington, D. C.*

The Wood Ibis in Virginia and Maryland. — On July 20, 1896, an adult *Tantalus loculator* was killed by Mr. Rudolph Thiele in his barnyard at Silver Hill, Maryland, near the District of Columbia line. There were two; the other, an immature bird, flew away about half a mile and was killed soon afterwards on the same day by Mr. Arthur Suit of Suitland. Both were mounted for the above named gentlemen, and I saw the fresh skins. On the 27th of the same month another, an immature female, was shot in an oat field near Laurel, Maryland, and sold to and mounted by Mr. Geo. Marshall of that place, in whose collection it now is. On July 18, 1896, three others, an adult and two immature birds, were shot by two boys at Vinitarville, Goochland County, Virginia, and the wings and

other parts forwarded to the National Museum by Mr. R. S. Allen for identification.

I have a cutting from a Richmond, Virginia, paper, name and date unknown, which notes the occurrence in New Kent County of four Wood Ibises, one of which was shot by Mr. W. J. Taylor and the head and wing exhibited in Richmond. The date was evidently the summer of 1893. Two, an adult and a young, were killed in Washington, July 2, 1892, as previously mentioned in 'The Auk,' (X, 1893, p. 91).— WILLIAM PALMER, *Washington, D. C.*

A North American Snipe New to the A. O. U. List. — Swainson in Sw. and Rich., Fn. Bor.-Am., II, 1831, p. 501, describes *Scolopax leucurus* sp. n., from Hudson Bay, and says that "a single specimen of this bird in fine and perfect plumage, exists in the British Museum." It is a large species with 16 rectrices, whereof the three outer pairs are almost entirely white. Swainson's type is still extant in the British Museum, and has been identified with *Gallinago major* by Dr. Sharpe, who cites *S. leucurus* among the synonyms of this species, and catalogues Swainson's type from "Hudson's Bay" (Cat. B. Brit. Mus., XXIV, 1896, p. 628 and p. 631). The specimen appears as one of a large lot acquired by the British Museum by purchase from the Hudson Bay Company many years ago, to none of which does any doubt of locality attach; and as there is obviously no reason to call Dr. Sharpe's identification in question, we may rely upon the record for the following addition to our Check-List:

[230.1.] **Gallinago major** (GM.).

Greater Snipe.

Scolopax major GM. Syst. Nat. 1, 1788, p. 661.
Gallinago major KOCH, Syst. Baier. Orn. 1816, p. 313.

GEOG. DIST. — Europe, Asia and Africa. Accidental in North America ("Hudson Bay").

There may be a question about the specific name of this bird, under our Procrustean rules. According to Dr. Sharpe's synonymy, it is *Scolopax media* Frisch, 1763, and *Gallinago media* Gerini, 1773 — both antedating Gmelin's *S. major*. Dr. Sharpe sensibly passes over *media* and adopts *major* — for to call a bird *media* in Latin and Greater or Double Snipe in English would be absurd. I hope some way can be found to square common sense with the Code in this case — if it cannot be, so much the worse for the latter. — ELLIOTT COUES, *Washington, D. C.*

The Occurrence of Tryngites subruficollis in the New England States. — There are several instances of the capture of the Buff-breasted Sandpiper in Connecticut and Massachusetts which do not appear to have been recorded. This Sandpiper, although common in certain sections in the West, is not very often met with along the North Atlantic seaboard.

The latest occurrence of this species in Connecticut appears to have been a specimen taken by myself on September 30, 1895. A solitary individual was found on the Quinnepiac marshes, which are situated near New Haven, Conn. A very stormy condition of the weather had existed for two days, and it was not strange that a species of the Limicolæ was blown inland by the prevailing easterly winds. On a portion of the meadows an unfamiliar looking Sandpiper was observed feeding in the grass. It appeared to be a bird of the present species, and seemed restless and wary, but it was shot before it could fly off. The bird was picked up, and found to be a Buff-breasted Sandpiper (*Tryngites subruficollis*), in the young plumage. No other birds of the Snipe family appeared to be in the vicinity. This record seems to be the second or third instance of the capture of this species in Connecticut, at least in recent years.

One of the previous instances may not have been recorded; a young bird was shot in the latter part of August, 1889, by Mr. Edward L. Munson, of New Haven, in almost exactly the same locality as that in which my specimen was taken.

In Massachusetts there have been a small number of these Sandpipers killed. Mr. George W. Mackey, of Nantucket, Mass., mentions in 'The Auk' (Vol. IX, 1892, p. 389) the capture of a few specimens on that island. Dr. Louis B. Bishop, of New Haven, informs me that he shot a young female Buff-breasted Sandpiper on Monomoy Island, Cape Cod, Mass., on September 19, 1895, and that another specimen was killed there by a market gunner on the same day.

Several more instances were reported some years ago from Cape Cod by the late Mr. J. C. Cahoon, of Taunton, Mass.

It has been taken several times on Long Island, N. Y., but the latest record in that locality seems to be August 28, 1888 (Auk, Vol. VI, 1889, p. 136).

The Buff-breasted Sandpiper is often found associating with the Pectoral Sandpiper (*Tringa maculata*) and it is to be looked for in flocks of the latter in the autumnal migrations. There are two instances of its capture in the Magdalen Islands, Quebec, Canada, where one individual was found on two occasions with a flock of Pectoral Sandpipers. The first instance was in September, 1888, the second in early September, 1890.

As most of the above records of the occurrence of the Buff-breasted Sandpiper in the East are spread over a number of years, the species must be considered as rather rare along the coast of the New England States. — C. C. Trowbridge, *New York City.*

Status of Helodromas ochropus in the A. O. U. List. — This European straggler appears correctly as "Accidental in Nova Scotia," I presume upon strength of the Halifax specimen in the Seebohm Collection, now in the British Museum. But we have forgotten or at any rate ignored the fact that the species was duly entered as North American in the Fn. Bor.-

Am., I, 1831, p. 392, "*Totanus ochropus*, the White-tailed Tatler" being formally described as such from a specimen from Hudson Bay in the British Museum. This specimen is extant, identified by Dr. Sharpe as *Helodromas ochropus*, and so catalogued from Hudson Bay (Cat. B. Brit. Mus., XXIV, 1896, p. 444), along with the Halifax one. For aught that appears to the contrary, we must recognize this record, and add "Hudson Bay" to Nova Scotia in our statement of the bird's North American occurrences.

While on this species, I may remark upon the claims of *Helodromas* to full generic rank apart from *Totanus*. I am not inclined to waste any time in discussing the difference between a genus and a subgenus, because I know there is none. Yet we have a sort of recognized convention or implication in the matter, chiefly for the purpose of being as consistent as we can regarding some degrees of difference which we rate as generic, and some lesser degrees we only allow to be subgeneric — just as we have in the cases of species and subspecies. *Helodromas*, I think, is quite up to the mark of an average genus — take them as they run in our List; and Dr. Sharpe thinks so too. Aside from some obvious proportions of external parts by which *Helodromas* differs from the type of *Totanus*, I may call attention to what may pass for "new evidence" in favor of generic distinction — not that it is new, except to our Committee in their official capacity. This is, that *Helodromas* differs from all its immediate allies in having the sternum single-notched — not a great matter, to be sure, in the order Limicolæ, where this bone is single-notched, or double-notched, or notched and fenestrate, but a useful character for generic distinction, like the presence or absence of a hallux, semipalmation or complete cleavage of the toes, etc. We may also recall in this connection the arboreal nidification of the Green Sandpiper — if nidification can be said of a bird that uses other birds' nests in which to deposit its eggs. On the whole, thinking we may safely and desirably treat *Helodromas* as a full genus, I propose this change in its status in our Check-List. — ELLIOTT COUES, *Washington, D. C.*

Status of the Redshank as a North American Bird. — There is a third record in the Fn. Bor.-Am., II, 1831, p. 391, which seems to require attention. This is that of the bird duly entered as *Totanus calidris*, "the Redshank or Gambet," and described from a specimen said to be from Hudson Bay, and at that time in the British Museum. I do not find it enumerated by Dr. Sharpe, nor does he cite this reference to *Totanus calidris* in his synonymy of the species. This leaves a cloud on the title of the Redshank to be considered North American; but the case is identical with those of the Greater Snipe and Green Sandpiper above discussed, in so far as the face of the original record is concerned. I think we should hardly ignore this, even though the specimen is not forth coming to speak for itself. We hardly find the joint authors of the Fn. Bor.-Am. at fault on a point like this, and they are little likely to have been mistaken

about such a common bird as the European Redshank or Pool-snipe. There is also no inherent improbability of the alleged occurrence at Hudson Bay of so wide-ranging a species, but quite the reverse; the probability is entirely in favor of the case as alleged. Under the circumstances the proper place for the bird would seem to be our Hypothetical List; and as a candidate for that position its claims are quite as good as those of various birds which have already found rest there. I would therefore propose the following addition, *ex hypothesi*, to the Check-List, p. 326:

11.2. **Totanus totanus** (LINN.).

Common Redshank.

Scolopax totanus LINN. Syst. Nat. I, 1758, p. 145.
Totanus totanus ———

GEOG. DIST. — Europe, Asia, and Africa. Described as North American from a specimen said to have been taken on Hudson Bay and transmitted to the British Museum (Sw. and Rich., Fn. Bor.-Am. II, 1831, p. 391).

I have only to add that this record is clear of all confusion with the case of the "White Redshank from Hudson's Bay" figured by Edwards, pl. 139, and by him considered as an albino. But if this be admitted in evidence, it supports the case now presented. — ELLIOTT COUES, *Washington, D. C.*

The Avocet (*Recurvirostra americana*) **at Ipswich, Mass.** — I take pleasure in reporting the capture of three American Avocets, on Sept. 13, 1896, at Ipswich Neck, Ipswich, Mass., by Mr. A. B. Clark of Peabody, Mass. The birds were brought into the taxidermist establishment of Mr. L. W. Newell in Boston, where I saw them, and where I at last found out about their capture. There were but three birds in the bunch. They were not sexed when skinned. — FRED. H. KENNARD, *Brookline, Mass.*

The 1896 Migration of Charadrius dominicus and Numenius borealis in Massachusetts. — The prevailing winds on Nantucket Island during the greater portion of the migrating period was as follows: August 13, east and southwest; 14, east; 15, northeast; 16, southwest; 17, northwest; 18, west; 19 and 20, north; 21, 22, and 23, south; 24, southwest; 25, east; 26, southeast; 27, north; 28 and 29, southeast; 30, southwest; 31, southwest, with squall from the north in late P. M.; Sept. 1, north by west. There was no severe blow or storm during this period.

On August 22, at night, a few Golden Plovers were heard passing over Tuckernuck Island, where on the 28th the first one of the season was shot. Five were also seen on this same date at the eastern part of Nantucket. On the 31st sixteen Plovers arrived in a certain preserved field on the Kimball farm, where in a short time their number was somewhat augmented, at which time some were shot. When I visited the remainder, a little later in September, I counted twenty-two, the greater part of

which were young birds. They seemed at home and at ease in the field. As I walked towards them at a distance they stood erect and moved about; after I disappeared from their view all but two or three of them squatted with their breasts resting on the ground.

On August 31, I drove pretty much all over the Plover ground on Nantucket without seeing a bird. There was a gentle southwest air in the morning, with a squall accompanied with rain late in the afternoon — about five o'clock. Early in the evening I was told that a flock of Plovers had been seen coming in towards the north shore of Nantucket from the Sound, and still later I was again informed of several other flocks being heard, for it was now about 7.30 o'clock, dark, and raining moderately, accompanied with but little wind.

It would seem that birds of various kinds commenced to seek land at about this time, for considerable numbers were soon heard calling as they flew around the electric lights located at the tops of the high poles in various parts of the town. This calling was nearly continuous up to one o'clock, midnight, and I have only two or three times before heard such prolonged and continual calling of the birds. They were apparently bewildered, and seemed to pass around a certain light for awhile, and then pass to another, later coming back to the first one. I therefore think we heard the same birds over and over again. In order to substantiate this I made inquiry the next day of some of the life-saving crews located at different parts of the island, as also of others, but none of them had heard of any birds, and they were all apparently in a restricted area over the town. While no birds were seen *distinctly*, many of the call notes were recognized by others and by me, those of the Greater Yellow-legs (*Totanus melanoleucus*) predominating. There were also the Smaller Yellow-leg (*Totanus flavipes*), Golden Plovers (*Charadrius dominicus*), Hudsonian Curlews (*Numenius hudsonicus*) (heard only twice), Black-bellied Plovers (*Squatarola squatarola*), Terns and Peeps. Several of the sportsmen told me they heard the notes of the Eskimo Curlew (*Numenius borealis*). I am inclined to the opinion that they must have been mistaken, inasmuch as I was up until half past eleven o'clock P. M. and did not hear any of them. It was with the liveliest anticipations for the next day's shooting that I retired for the night. I arose at three o'clock A. M., and my disappointment can be imagined better than told when on looking out I found that the weather had cleared, the stars were shining and the little air that was moving was from the *north*. Although hopeless, I was driving over the western Plover ground at daylight, hoping I might find a few tired birds. Seeing absolutely no birds in this quarter up to eight o'clock, I picked up my decoys and drove eastward where I remained until 1.30 P. M. and then returned home without having seen a bird. On the way I saw a number of sportsmen, none of whom, I learned on inquiry, had seen anything. *All* the birds had passed on without stopping. This was the first defined migratory movement this season of birds going southward.

On Sept. 3, at night, some Plovers were heard as they passed over the town. On Sept. 9 a severe storm prevailed, wind east-northeast with heavy rain. On the 10th it was still storming with wind southeast, also raining very hard during the first half of the day, but clearing about noon. No birds were noted, nor did any land, so far as I know. On Sept. 13 and 14 still another very severe storm prevailed at sea. On the morning of the 16th I visited a number of the principal game stalls in Faneuil Hall market, Boston, Mass. In all of them were six Golden Plovers, one of which was a young bird.

No Eskimo Curlews have been received in the market from this coast this season, as far as I can learn, nor have I seen or know of one being authentically noted this season.

A number of *young* blue-legged Jack Curlew (*N. hudsonicus*) landed in Massachusetts during this storm, and a number were taken. I saw about thirty in the market and about a dozen were shot in Nantucket. During the storm high easterly gales prevailed along the southern New England coast on the 13th, the maximum wind velocity being 52 miles at Block Island, 33 miles at Boston, and 26 miles at Nantucket. This storm came from the sea, giving no previous warning. No Plovers or Eskimo Curlews could have been passing at the time, as otherwise they would have been forced to seek land for shelter from the elements.

Personally I have taken but four Golden Plovers this season, two of which were young birds. In addition to these perhaps one dozen more may have been shot on Nantucket and Tuckernuck Islands. On the north shore of Massachusetts, at Ipswich, one of the principal sportsmen there informed me he had seen and taken only one Golden Plover. There was no landing of Plover or Eskimo Curlews in that vicinity this season. He thought he saw four Eskimo Curlews very high up in the air flying on migration.

Some of the large game dealers in Boston, Mass., received *as usual* the past spring and summer, considerable numbers of these birds which had been taken in the Mississippi Valley while on their northern migration to their *breeding grounds*. Among them were large numbers of the Bartramian Sandpipers, which bird is already scarce as a resident on the New England coast. Are we not approaching the beginning of the end? —GEORGE H. MACKAY, *Nantucket, Mass.*

Validity of the Genus Lophortyx. — It is well-known that in the Gallinæ the number of tail-feathers is a good clue to the genera. Excepting when very numerous — 20 to 32 — they are quite constant in the genera usually recognized, such a case as that of *Coturnix*, in which the rectrices are 10 or 12, being quite unusual. Our Grouse, for example, are well marked in this respect, though some have as many as 20 rectrices, and are not free from some individual variation in the numbers. In the Odontophorinæ, a compact group of Perdicidæ, peculiar to America, the rectrices are invariably 12, except in the recently separated genus *Rhynchortyx*, which

has only 10, and in *Callipepla* proper, which has 14. *Lophortyx* has 12, like all the rest of the genera, excepting the two just named, and in my judgment should never have been united with *Callipepla* by the A. O. U. I propose that we restore it to full generic rank, on the ground of the difference from *Callipepla* in the number of rectrices, together with the remarkable peculiarity of the crest, and also the decided difference in the plumage of opposite sexes, as compared with the great similarity between the sexes of *Callipepla*. *Lophortyx* seems to me to be, in fact, one of the best characterized genera of Odontophorinæ; and *Callipepla* is unique in this subfamily in the number of its rectrices. — ELLIOTT COUES, *Washington, D. C.*

Notes on the Mexican Ground Dove. — Desiring to do what I can to free the A. O. U. Check-List of even the slightest blemishes, I may correct two errors which appear under *Columbigallina passerina pallescens*, No. 320*a*, where "C 374, *part*" and "C 547, *part*" appears. The facts are otherwise. I believe I am the only author who has persisted in recognizing this subspecies ever since it was described by Baird in 1859; it is ignored in the A. O. U. List of 1886, and first given a place in the List of 1895. But it has stood unchallenged in the 'Key' since 1872; it is "C 374*a*" of my first Check-List, 1873, and "C 548" of my second Check-List, 1882, with the same separate number in all the eds. of the 'Key' since 1884.

No doubt many ornithologists share my regret, that *Chamæpelia* must give way, under our rules, to such a monstrous name as *Columbigallina;* but the peculiar atrocity of *Columbigallina* may not yet have dawned upon all of them. It is traceable back to the "Colombi-Galline" of the mendacious Levaillent, Oiseaux d'Afrique, VI, 1808, p. 98, pl. 278, the same being a fictitious bird of Africa, made up of the skin of a tame pigeon with artificial wattles: see Sund., Kön. Svensk. Vet.-Ak. Handl., 1857, p. 55, and Tent., 1873, p. 98; also, Salvad., Cat. B. Brit. Mus., XXI, 1893, p. 647. This miserable artefact became promptly the *Columba carunculata* of M. Temminck and Mme. Knip, and in due term spawned three bastard genera: *Verrulia* Fleming, 1822; *Creogenys* Gloger, 1842; and *Alectryopelia* Van der Hoeven, 1855. Such is the pity that our innocent little Ground-doves should expiate the original sin by bearing the stigma of such a name; and more's the pity that it is saddled on the patient ass of ornithological nomenclature. — ELLIOTT COUES, *Washington, D. C.*

Another Golden Eagle in Connecticut. — An adult male Golden Eagle (*Aquila chrysaëtos*), weighing eight pounds and a half, alar extent seven feet five inches, now in my possession, was taken Jan. 19, at Salem, twelve miles west of this place towards the Connecticut River. It was trapped while feeding on the carcasses of sheep killed by dogs. Its tracks were seen the day before, and foot-prints similar to these were seen last winter

in the same locality. Possibly this Eagle was mate to the fine female whose capture was noted by Prof. A. E. Verrill of New Haven in the January 'Auk' (XIV, p. 891). — C. L. RAWSON, *Norwich, Conn.*

Northern Hawks in Massachusetts. — The American Goshawk (*Accipiter atricapillus*) has been abundant in this section the past fall and winter. I myself have secured three specimens, one of which I caught in a steel trap. All that I have secured or seen, except one, were in adult plumage.

On Feb. 25, 1897, I drove within ten yards of a Rough-legged Hawk (*Archibuteo sancti-johannis*), in the light phase of plumage, perched by the roadside on the edge of a grove of white pines. — HERBERT K. JOB, *North Middleboro', Mass.*

Swainson's Hawk in Michigan. — I wish to record the capture of a Swainson's Hawk (*Buteo swainsoni*) taken by myself in Cheboygan County, Mich., in October, 1883. I can find but three other records for the State. — NORMAN A. WOOD, *Ann Arbor, Mich.*

Note on Elanus glaucus. — Benjamin Smith Barton's 'Fragments of the Natural History of Pennsylvania,' published in 1799, is a folio of pp. xviii + 24, so rare as to be little-known or almost forgotten. Many ornithologists might never have heard of it, had it not been for *Hirundo horreorum*, which Baird adopted in 1858 for the Barn Swallow. But in 1878 I gave a careful analysis of this tract (B. Coll. Vall., pp. 592–594), which made all its ornithological points accessible; and had due attention been paid to this matter, we should not now have to change certain names which have obtained undeserved currency through the deservedly high authority of the A. O. U. Check-List. Some objections which have been urged against Bartram's names do not extend to those of Barton, who was a strict binomialist, and whose identifiably described species must consequently be recognized if they happen to fall under our rule of priority. One of these is "*Falco glaucus* of Bartram," whose name and sufficient description are repeated by Barton, with due binomiality on p. 11 of his work. "Now," as I observed (*l. c.*, p. 593), "those who decline to have anything to do with Bartram, on the ground of his untenable nomenclature, will necessarily observe that *Elanus glaucus* (Barton, 1799) must replace *E. leucurus*," as Vieillot's *Milvus leucurus* dates 1818. Our Committee can hardly plead ignorance of the fact that *E. glaucus* has also stood as the name of the White-tailed Kite in my 'Key' since 1884; for that would argue an incredible unfamiliarity on their part with current ornithological literature. The mistake may be regarded as an oversight which we can hasten to correct in the next Supplement to the Check-List.

Reference to the Bibliography above mentioned will reveal a number of other Bartonian names which need attention. For example, *Certhia familiaris fusca* (Barton, 1799); for Barton's *C. fusca*, fully described, antedates Bonaparte's *C. americana* of 1838, as the name of the American

Brown Creeper. True, it is itself antedated by *C. rufa*, Bartram, 1791; but the present temper of the A. O. U. Committee throws Bartram out of the case. — ELLIOTT COUES, *Washington, D. C.*

The Roadrunner as a Destroyer of Caterpillars. — In southern California the passion vine is everywhere infested by a red butterfly (*Agraulis vanillæ*), the larva of which feeds extensively if not entirely upon this plant. So great is the damage that plants are often completely defoliated and become so unsightly that in some regions many have destroyed their vines and replaced them with other species, less desirable perhaps but less apt to breed a horde of pests.

Not long since I called on a friend living in the suburbs of San Diego who had a large number of unusually thrifty passion vines climbing over his fence. Upon inquiring the reason of their freedom from what I had considered an inevitable pest, he informed me that a pair of Roadrunners (*Geococcyx californicus*) had for several months paid daily visits to his vines, climbing through them in all directions until the last caterpillar had been captured.

He said that he was satisfied that several newly hatched chickens had gone to satisfy hungry Roadrunners on one or two occasions when the vines yielded less than usual, but they were welcome to a chick once in a while for their very valuable service in keeping in check a pest that none of our other native birds seem to feed upon. — A. W. ANTHONY, *San Diego, Cal.*

How the Chimney Swift secures Twigs for its Nest. — Among some of the beautiful drawings of birds done by Mr. L. A. Fuertes, and submitted to my approval by the Messrs. Macmillan of New York, with reference to their publication in a work for which I am partly responsible, there was one which I 'held up' for further consideration. This represented a Chimney Swift in the act of snapping off a bit of twig with its feet, like a hawk seizing its prey. We have always supposed the bird secured the object with its beak, as it dashed past on wing at full speed; or at any rate that has been my own belief for more years than I can remember. But Mr. Fuertes vouched for the correctness of his representation from actual observation. The question being thus raised, I set it forth recently in a query inserted in one of our popular periodicals,[1] asking for information. I have received a number of replies, mostly corroborating the traditional belief, on what purports to be sufficient observation of the bird in the act. But Mr. Fuertes is supported in his view by Mr. Frank J. Birtwell, of Dorchester, Mass., from whose letter I quote: "In 1894 I spent the summer at Yarmouth, Nova Scotia, where the Swift is common, nesting in unused chimneys of the village. The bird flies to a tree, usually a spruce, and

[1] 'The Nidologist' for March, just to hand, contains (pp. 80, 81) several replies to my interrogation — and these leave the case still open!

alights on a dead twig, her weight or the action of her wings snapping it off. She then carries it off in her feet. Last May 23d a Swift flew to a willow near where I was standing, and snapped off a dead twig in the same manner." This is precisely the performance which Mr. Fuertes's drawing represents. — ELLIOTT COUES, *Washington, D. C.*

Probable First Description of Empidonax flaviventris. — It would seem unlikely that two such common birds as the Least and the Yellow-bellied Flycatcher could have slipped through the fingers of Wilson, Nuttall, and Audubon, and remained to be discovered by the Messrs. Baird in 1843. Of the two, the Yellow-bellied is the brightest colored and best marked in comparison with the Small Green-crested — the only one of the three which was characterized in Wilson's time; both Traill's and the Least being less likely than the Yellow-bellied to be discriminated from the Green-crested in those times. I find in Nuttall a notice which, it seems to me, can hardly be anything else than an indication of *E. flaviventris*. This is as follows, with italics for the most significant phrases:

"NOTE. We are acquainted with a third small species [of flycatcher] allied to the present [*Tyrannula pusilla* Sw.] and *acadica*, but distinguishable by the *superior brightness* of its plumage; being olive-green above *and on the flanks*. Rump, *and beneath the wings* almost *sulphur-yellow*, with a brightish bar also on the wings. This species does not appear to migrate much to the north of New York State." Nutt., Man., orig. ed., Vol. II, 1834, App., p. 568.

Nuttall is here speaking of no imaginary bird, and not compiling a notice from somebody else. He knows such a bird, and he describes it at first hand — perhaps from memory, perhaps from observation in life without a specimen; but at any rate, his bird is a fact, and as such must be accounted for. He is also dealing with a true Flycatcher — not with any Warbler, or Vireo, or even Fly-catching Warbler of his genus *Sylvania* — all of which he is perfectly able to discriminate from any species of "*Muscicapa*" or "*Tyrannula*." In the orig. ed., I, 1832, he has the Phœbe, the Wood Pewee, the Olive-sided, and the Small Green-crested, all pat and by themselves, showing that he understands this group as something apart from Warblers, etc. In the Appendix to his Vol. II, 1834, when he had got hold of the Fauna Boreali-Americana, he adds to his list of true Flycatchers *Tyrannula pusilla* Sw., and *Tyrannula richardsonii* Sw., between which two species he interpolates the 'note' I have just cited. This fixes the position of his new bird as a 'Tyrannuline,' and I do not see what else it can be than *Empidonax flaviventris;* the description is a fairly good one, and certainly fits *flaviventris* better than it does any other species. Nuttall gives no name to his new bird, and in fact cancels his 'note' in his 2d ed., 1840, where the case drops out of sight altogether; so that no nomenclatural question is raised. But this fugitive 'note,' tucked away in the appendix to his Water Bird volume of 1834, and then disappearing seems to embody a curious bit of early history, worth pausing a moment to consider. — ELLIOTT COUES, *Washington, D. C.*

Two New Birds for Maine. — The United Ornithologists of Maine report the occurrence of two birds new to the State. The February number of the 'Maine Sportsman,' their official organ, published in Bangor, reported the taking of a Greater Redpoll, *Acanthis linaria rostrata* at Gardiner, Dec. 30, 1896, by Wm. L. Powers. The bird was shot from a flock of Lesser Redpolls, and the skin sent to Mr. Wm. Brewster, Cambridge, Mass., for identification.

The March number contains the account of a number of skins collected in the winter of 1878–79 by James Carroll Mead of North Bridgton. Mr. Mead was with Mr. Powers when the Greater Redpoll was captured, and on returning home and inspecting his collection, he deemed it wise to submit them to Mr. Brewster, who identified one as the *Acanthis linaria holboellii*, which decision was afterward ratified by Mr. Robert Ridgway of the Smithsonian Institution. — Wm. L. Powers, *Gardiner, Me.*

The Redpoll in Maryland. — Sunday, January 17, 1897, while walking in Druid Hill Park, Baltimore, I saw a highly colored male Redpoll (*Acanthis linaria*). When first seen it was perched in a tree about twenty feet from me, and after watching it for some time with a field glass, I tried to approach nearer, but when my eyes were off it for an instant it disappeared from view, and although I hunted it for quite a while I was unable to see it a second time.

I was surprised to see one, as I have only expected them during very severe weather, whereas we have not had such, the thermometer at the time registering 42°. — Wm. H. Fisher, *Baltimore, Md.*

Bachman's Sparrow in Maryland. — While passing through an old scattered pine wood on April 29, 1896, near Kensington, Maryland, my attention was attracted by the loud and unfamiliar song of a Sparrow perched well up in an old dead pine top. I secured the bird, which turned out to be an adult male *Peucæa æstivalis bachmanii* in well worn plumage. Close by in another pine I crippled another which managed to reach the top of the tree and remained hidden in spite of my efforts to dislodge it. This is apparently the most northern record on the Atlantic Slope, and is a new addition for Maryland. — J. D. Figgins, *Washington, D. C.*

The Seaside Sparrow (*Ammodramus maritimus*) at Middletown, R. I. — In looking over a collection of land and water birds taken by Mr. Edward Sturtevant in Rhode Island, I found a specimen of a male Seaside Sparrow which he had shot near Gardiners Pond on the Second Beach Marshes in Middletown on July 18, 1889.

During the past summer I walked over these same marshes, but did not see a bird that justified shooting as a Seaside, among the many Sharp-tailed Sparrows (*A. caudacutus*) that inhabited the marshes. But on July 6, 1896, Mr. Sturtevant took a female *A. maritimus* on the marshes.

Personally, I think that a few of these Sparrows breed on the Middletown marshes yearly, and if this is a fact it moves their known breeding range sixteen miles to the northward, or in other words from Point Judith marshes to Middletown.

I cannot think that after breeding is over, which by July 6 could hardly be, the birds would roam sixteen miles to the northward across ocean. However, we have at least two records of their capture there; if nothing more. — REGINALD HEBER HOWE, JR., *Longwood, Mass.*

Henslow's Bunting (*Ammodramus henslowi*) Found Breeding at Plymouth, Michigan. — On July 27, 1893, while mowing grass in a hay field, I discovered a bird which by its peculiar song and habits was a new species for this locality. It had a nest, among the tall grass, which contained eggs, but unfortunately they were broken by the mowing machine. The bird was very uneasy, repeatedly hiding in the tall grass and only leaving its hiding place when the mowing machine knives were nearly upon it. It stuck to the standing grass until the last swath was cut, after which it would dive under the fallen hay, where I tried repeatedly to capture it alive, and after failing in this, I procured the specimen with a gun. After careful examination I pronounced it the Henslow's Bunting, but to make the identification sure, I later presented the specimen to the United States National Museum, and received the following in reply from Mr. Charles W. Richmond, Assistant Curator of the Department of Birds.

"In reply to your letter of the 2nd inst. [March 2, 1896] addressed to Mr. Ridgway (who is absent in Florida), I have to say that your identification of the specimen sent as a Henslow's Bunting is correct. This species ought not to be seen in Michigan. Cook's Birds of Michigan does not record any specimens taken in the State. The bird is very liable to be overlooked, but when once you learn its song you will be quite sure to find more of them. The eggs are quite uncommon in collections. Major C. E. Bendire, the Curator of Oölogy here, can give you more definite information on this point. We are pleased to accept your offer to give the specimen to the National Museum, and you will receive due acknowledgment in a few days."

I then sent the following description of the eggs to Major Bendire. Eggs white, dotted at the large end with reddish spots, and thinly dotted with reddish specks at the small end. Nest composed of fine dry grass, and lined with the same material. To this Major Bendire replied as follows:

"In answer to yours of the 9th inst., I have no doubt whatever that the nest and eggs you describe are those of Henslow's Bunting; your description of the same fits them exactly, and since you secured the bird at the same time (which I have seen), it makes this almost positive. There can be little doubt that the eggs in question are those of Henslow's Bunting, and so far as I know, I believe this is the first instance of this bird having

been found breeding in Michigan. We have but very few fully identified eggs of this species, and they are still rare in collections, and your find is a very interesting one."

During the past seasons since I found this bird, I have carefully searched the meadows for more specimens of Henslow's Bunting, but without success. The one which I found is now in the United States National Museum, and is labeled Henslow's Bunting (*Ammodramus henslowi*), Accession No. 30409. — JAMES B. PURDY, *Plymouth, Mich.*

Occurrence of Zonotrichia albicollis in California. — On October 27, 1896, Mr. Henry Ward Carriger of Sonoma, Sonoma Co., Cal., secured a specimen of the White-throated Sparrow, a male in almost full plumage. It was observed along a small creek at the edge of the foothills in company with several Golden-crowned Sparrows and greatly resembled them in its actions. The specimen proved to be well nourished, and is the first occurrence of this species recorded from Sonoma County, and adds another record of this bird for California. — C. BARLOW, *Santa Clara, Cal.*

How about the Genus Pipilo now? — I observe by the Eighth Supplement to our Check-List that we have officially adopted Mr. Ridgway's new genus *Oreospiza*, for that species which we have been calling *Pipilo chlorurus*. This is well, in my judgment; in fact, I could produce some manuscript, in my own handwriting, of date 1862, in which I took the bird entirely out of the genus *Pipilo;* though I never published that screed, chiefly because my mentor at that time, Professor Baird, was vexed at something I did with Bonaparte's genus *Kieneria*. But the present trouble is that in our Check-List, both eds., "*Pipilo*" *chlorurus* has been interjected forcibly in the middle of its supposed genus, with the black or green and white Towhees in front of it, and the brown Towhees behind it; with the interesting result, that *Oreospiza*, the heterogeneous element or unconformable factor in the case, now splits *Pipilo* apart! Our genera now run (1) *Pipilo;* (2) *Oreospiza;* (3) *Pipilo*. Our species run: No. 589, *Pipilo consobrinus;* 590, *Oreospiza chlorura;* 591, *Pipilo fuscus mesoleucus*. I gladly leave this case to the tender grace of any one who will admit his responsibility for putting "*Pipilo*" *chlorurus* in that fix. I decline to assume any responsibility myself; the bird will be found in several of my works since 1872 in what I took to be its proper position. — ELLIOTT COUES, *Washington, D. C.*

The Bahaman Swallow in Florida. — In a collection of birds purchased several years ago of Mr. W. E. D. Scott I have lately found a Bahaman Swallow (*Callichelidon cyaneoviridis*) the original label of which reads as follows: "Register 12558, W. E. D. Scott, Tarpon Springs, Florida, September 3, 1890; W. S. Dickenson." It is a young bird in practically

unmixed *first plumage* but with fully developed wings. The tail is shorter and less deeply forked than in old birds and the rectrices are worn and faded. Mr. Scott assures me that the data just quoted are in every way correct. He remembers the bird prefectly but had supposed it to be a young White-bellied Swallow which, indeed, it resembles rather closely but from which it may be at once distinguished by its much narrower tail feathers and by the lighter, grayer coloring of its head and back. It is, I believe, the second specimen which has occurred within the limits covered by our Check-List and the first that has been taken on the mainland of Florida. — WILLIAM BREWSTER, *Cambridge, Mass.*

Geothlypis agilis a Possible Breeder in Northern Minnesota. — There are points in common between the Carberry bog of Mr. Ernest E. Thompson (see Seton in 'The Auk,' April, 1884, p. 192) and one visited by the writer in the spring of 1893, near Hickory, Aitkin County, Minnesota, where several pairs were nesting, or at least had taken up their residence for the season.

With reference to the actual taking or discovery of nest and eggs of this bird, it is believed that the Manitoba record still remains unique.

Mr. Oscar B. Warren is of the opinion, however, that the Connecticut Warbler nests near Palmer, Michigan, a fledgling young being taken there by him on Aug. 10, 1894.[1]

Near Hickory there are many tamarack swamps, but of the several inspected one only appeared suitably attractive for the needs of this shy bird, perhaps one of the least known of our Warblers, and so no doubt by his retiring and terrestrial habits and usually quiet ways, which render easy observation difficult. But to one quite familiar with its characteristic song or notes no such difficulty should exist, for *agilis*, as its name implies, is but seldom seen. The clean cut notes, the *Wheat! our-winter-wheat!* of this lusty songster, with the author thereof in evidence, once heard and seen will surely ever afterwards be remembered.

A mile or more south of Hickory is a typical spruce bog; it begins at the Mille Lacs post-road on the east and extends in a westerly direction possibly three-quarters of a mile, its greatest width being about one-eighth of a mile.

At the eastern end of the bog the trees are mainly of a young growth of the black spruce (*Picea madiana*) arranged in an open and park-like way and presenting a landscape unusually attractive and pleasant to look upon in the beauty of natural detail. The western extremity was largely given up to tamaracks. Many of the spruces were "grizzled with moss" (*Usnea*), and the ground beneath them covered by a dense growth of sphagnum, with here and there occasional patches of pitcher-plants.

It was here on the morning of June 21 that I first discovered my songsters, their loud and cheerful notes penetrating the then clear air,

[1] See 'The Auk', April, 1895, p. 192.

first greeting me near the eastern end of the bog, where I had left the roadway to investigate the source of some vigorous musical efforts on the part of a male Solitary Vireo whose song was then new to me. A short distance in among the spruces brought me to the apparent home of these Warblers.

Subsequent visits followed; *agilis* was as frequently in song and fully as difficult to find, for of the several heard but one was actually seen. So, too, a most careful search for the nest and eggs also proved of no avail, furnishing as it did to my mind, additional evidence of this bird's secretive ways in this its chosen breeding home.

With her network of innumerable lakes, ponds, rivers, creeks and swamps the northern part of Minnesota should furnish many such localities as this, and "in nesting time" a capital resort for the Connecticut Warbler.

With further investigation this will doubtless prove true of the pine land regions at least, and more particularly of those portions of the state falling within the limits of the Cold Temperate Subregion of Dr. Allen.

Other occupants of the bog were the ever present Peabodies, a pair or two of *Vireo solitarius*, some few specimens of the Purple Finch, and a number of high-colored males of *Dendroica blackburniæ*, making in all, as it was, a most interesting gathering, and comprising with the trees and plants a high-class picture of intrinsic worth, one's admiration for which being easily sustained by the additional favored efforts of that post-graduate minstrel of our northern woods, the Hermit Thrush. Now softly, now louder, those exquisitely sweet though melancholy strains would come at times from out the shadier depths of the deeper woods and darkened thickets not so close at hand. — BENJ. T. GAULT, *Glen Ellyn, Illinois.*

Untenability of the Genus Sylvania Nutt. — My tacit acquiescence in our use of *Sylvania* has hitherto been simply because I had no special occasion to notice the matter, and presumed that our Committee had found the name tenable by our rules. But a glance at Nuttall's Man., I, 1832, p. 290, where the name is introduced, shows that it can have no standing, being merely a new designation of *Setophaga* Sw. 1827, and therefore a strict synonym. Nuttall formally and expressly gives it as such, making it a subgenus (of *Muscicapa*) in the following terms:

"Subgenus. — SYLVANIA.* (Genus SETOPHAGA, Swainson.)"

This is enough to kill it — say rather, the name is still-born; and why we ever undertook to resuscitate it passes my understanding. But let us assume, for a moment, that it looks alive, and see what the result will be. Nuttall puts in *Sylvania* birds of three modern genera: 1. The Redstart. 2. The Hooded Warbler, etc. 3. The Blue-gray Gnatcatcher. 1. The Redstart is already type of *Setophaga* Sw. 2. The Hooded Warbler, etc., are eliminated as *Wilsonia* Bp., 1838, and *Myiodioctes* Aud., 1839. 3. Leaving "by elimination" the Blue-gray Gnatcatcher as type of *Sylvania*,

of which *Polioptila* Scl., 1855, thus becomes a synonym. A pretty kettle of fish this, for a reductio ad absurdum!

Sylvania must be dropped, and our choice of a name for the genus lies between *Wilsonia* Bp., 1838, and *Myiodioctes* Aud., 1839. Use of *Wilsonia* in botany does not debar it in zoölogy, and if it is not otherwise preoccupied it must stand. Soon after its rejection by Baird in 1858 on the ground of botanical preoccupation, it was used by Dr. Allen, in Proc. Essex Inst., IV, 1864, p. 64, and in various other places in succeeding years. I brought it pointedly to the front in Bull. Nutt. Club, V, 1880, p. 95; and the same thing was done over again, without any reference to these earlier usages, by Dr. Stejneger, Auk, July, 1884, p. 230. — ELLIOTT COUES, *Washington, D. C.*

The Carolina Wren (*Thryothorus ludovicianus*) **at Inwood-on-Hudson, New York City.** — Visiting my summer home at Inwood-on-Hudson, March 28, 1896, I heard a loud and beautiful song coming from the top of a dead elm tree. The bird sang almost continually until my efforts to get a good view of him frightened him away. After sitting fifteen minutes on a rock near where the bird had appeared to alight, and waiting for the song, he broke out again, and I discovered him perching on a low tree not twenty-five feet distant.

It was a new species to me, but it seemed to me it must be the Carolina Wren, and on studying up the bird carefully, in all my books at home, I felt quite sure the identification was correct. I heard him again on April 1 and 22. May 14 we went to Inwood for the summer, but only heard the Wren sing four times, until May 22. Then I had a fine view of one near some dilapidated buildings around an unoccupied house. Four days later loud and continued singing attracted me to a heap of dry brush near these buildings, and there I found the parents and five little Carolina Wrens. The young were able to fly nicely, and they gave a musical call, much like that of the old birds, and scolded beautifully.

After that, they were seen frequently, and I heard the beautiful song at all hours of the day, up to Nov. 12, when we moved to town. Going to Inwood on Jan. 18, 1897, I heard the full song again, so it would appear that they wintered there.

The old birds were quite tame, lighting and singing in shrubbery close to the house, and twice one was seen on the piazza, examining plants in pots, and even drinking from the saucer of a flower-pot. — F. H. FOOTE, *New York City.*

The Mockingbird at Portland, Maine, in Winter. — On January 19, 1897, at noon, a Mockingbird (*Mimus polyglottos*) appeared in a gutter which runs beneath the south window of my study. The thermometer was below zero, and there was no snow, but an unclouded sun had softened the ice in the gutter so that the bird could moisten his tongue; and this he seemed to be doing when I first saw him. He was perhaps

five feet distant from my chair, and I noted at once that he looked like a wild bird, his ruffled plumage being in prefect condition, unfrayed and unstained. In a moment he caught sight of me and flew away.

A heavy snow-storm set in the next day. It was followed within the week by another. Wintry weather prevailed generally up to January 29. On that day I was told by a neighbor — Edward Woodman, Esq. — that he believed a Mockingbird had been visiting his grounds for several days. There, on January 31, I saw the bird again. He was rather shy and quite silent, and soon flew away.

I published a notice of this interesting winter visitor in the Portland 'Daily Press' of February 2, hoping, if he were an escaped cage bird, that the fact would thus be brought out. Nothing, however, was elicted. Enquiries of local bird fanciers also failed to lead to the knowledge of any lost pet bird.

I now met with the wanderer nearly every day. About three o'clock of the afternoon of February 11, the sun shining warmly in a still, crisp air, he took up a position in the top of a tall elm before the same window from which I first saw him, and sang loudly for a few moments when he was apparently frightened away by passers-by. On February 15, I saw him for the last time, feeding on the berries of a mountain-ash. Four days later, — just one month from his first appearance, — Mrs. Charles J. Chapman, a neighbor and an entirely competent witness, reported to me that he had that morning visited her grounds in search of mountain-ash berries.

I have been able to find but one previous record of a supposed wild Mockingbird in Maine, — a very indefinite note by Mr. G. A. Boardman in the 'American Naturalist,' Vol. V, April, 1871, p. 121. It is this note, apparently, to which reference is made in 'New England Bird Life,' Vol. I, p. 62. — NATHAN CLIFFORD BROWN, *Portland, Me.*

Turdus lawrencii Coues. — In 1878, George N. Lawrence described a new Thrush from the upper Amazon, as *Turdus brunneus*,[1] evidently unaware that the same name had been previously applied by Brewer, in 1852, to the North American species now known as *Turdus fuscescens*. A year later, Dr. Coues published the third instalment of his Ornithological Bibliography, in which he inserted the title of Lawrence's paper with the following comment: "N. B. There is more than one *Turdus brunneus* of earlier authors. The present belongs to the section of the genus including *T. leucomelas, albiventris*, &c. If a proper *Turdus*, stet *Turdus lawrencii*, nobis, hoc loco, species renovata."[2] *Turdus lawrencii* seems to have been overlooked by subsequent writers, and is not mentioned even in Seebohm's Monograph of the Turdidæ (Brit. Mus. Cat. Birds, V,

[1] Ibis, 4th Ser., II, Jan., 1878, p. 57, pl. i.

[2] Bull. U. S. Geol. & Geog. Surv. Territories, V, No. 4, Sept. 30, 1879, p. 570.

1881), or Foster's list of the Published Writings of George Newbold Lawrence (Bull. U. S. Nat. Mus., No. 40, 1892), which contains a detailed list of the species named in honor of Lawrence. Seebohm (l. c., p. 24) gave *Turdus brunneus* as a synonym of *Merula leucops*, described by Taczanowski in 1877, but the status of the name need not be considered here. Ordinarily new specific names are not looked for in bibliographies, and since *Turdus lawrencii* has remained buried for 18 years, it seems desirable to place it on record in some more conspicuous place where it will be found by those who may have occasion to take up the nomenclature of South American Thrushes. — T. S. PALMER, *Washington, D. C.*

Some New Records from Central New York. — Since April, 1894, when I recorded in 'The Auk' eight new species for 'Oneida County and its Immediate Vicinity,' I have been able to add four new records, making the total number of species and subspecies recorded from our territory 243. These four records are as follows, viz.:

Uria lomvia. — In Christmas week, 1894, the mounted letter carrier on the road between Utica and New Hartford captured one of these birds alive, finding it almost helpless in the road just outside of the city. It was kept alive for several days and after its death was mounted and preserved.

Mr. W. S. Johnson of Boonville has recorded two other specimens of this species taken the same month in the northern part of this county (Auk, Vol. XII, p.177).

Colinus virginianus. — During 1894 Mr. William R. Maxon of Oneida wrote me that his father had seen a Quail near Oneida Lake, that he knew the bird well and had watched it for some time at only a short distance away. He also wrote me that a pair had nested on the farm of Lewis Maxon in the town of Verona about twenty years ago, that one had been seen at Vernon and one at Oneida Castle within a few years, and that a perfectly reliable gentleman informed him that a few Bob-whites were to be seen about his place every year. I then wrote to some of my sportsmen friends in that neighborhood, from one of whom I received the information that there was a small covey of these birds around the barns of a noted shooting man residing near Oneida Lake, that they were quite tame and he saw them often; but he would not shoot any of them, and intended to see to it that no one else did. So I think we may safely write this bird down in our list as rare, in the western part of the county.

Falco peregrinus anatum. — For years there has been a story that a pair of Golden Eagles nested every year on the cliffs near the head waters of the West Canada Creek, in the town of Morehouse, Hamilton County. This town is mostly in the Northern Wilderness of the State and these cliffs are miles from human habitation.

In August, 1895, I visited the neighborhood but failed to see either old or young birds, though my guide assured me that he had often seen them

there and had found bones of good sized mammals at the foot of the cliffs.

On May 15, 1896, I was in camp within a few miles of these cliffs (and intended renewing my visit), when Charles Haskell, a well known collector in the employment of Dr. W. L. Ralph, stopped over night with me on his way to try and collect this Eagle's nest. Notwithstanding that he urged me to go with him I allowed a previous arrangement for the day to prevent, and he departed with his guide at daylight on the 16th. He was back at my camp by late afternoon with a beautiful set of three eggs of the Duck Hawk. He found the nest thirty feet below the top of the cliff, which is several hundred feet high, and he was let down with a rope from above. He stated that the bird was very bold and that he had to keep her off with a short club.

Whether he collected the famous 'Eagle's nest' or not, is yet to be discovered but the Hawk is a new record for this district, and I believe the nest is a new record for the State of New York. The three beautiful eggs are before this with Dr. Ralph's other contributions in the Smithsonian at Washington.

Ammodramus savannarum passerinus. — A specimen of this bird was killed on the hills south of Oneida Village, July 2, 1895, by Messrs. Wm. R. Maxon and T. F. Wilcox.

In addition to the above new records the following are worth recording.

Ardetta exilis. — Mr. Wm. R. Maxon of Oneida informs me that a gentleman of that village killed two of these birds in August, 1892, a few miles west of that place, and also says that since then he has several times seen these birds in the same locality. We had but one previous record of this bird.

Nycticorax nycticorax nævius. — Mr. Maxon has a full plumaged male of this species which was taken in a steel trap set for muskrats, near Higginsville. Mr. Klock, an Oneida taxerdermist, reports several females (or young ?), from Oneida Lake.

Cathartes aura. — A specimen of this bird was winged near Maynard, in this county, in August, 1896, and is still kept alive in this city. Our second record.

Aquila chrysaëtos. — A Golden Eagle was shot, wounded and captured at Clinton early in May, 1896, and was kept in captivity for some time. Our second record. — EGBERT BAGG, *Utica. N. Y.*

Lake Michigan Bird Notes. — Tringa canutus. — While collecting on the branch of Lake Michigan at Millers, Indiana, August 24, 1896, I obtained a juvenile male of this species which is in the gray and white plumage. It was in company with a large flock of Sanderlings.

Tringa bairdii. — I took one specimen of this bird, and observed several others. It was surprising how difficult I found it to approach within gun shot of the beach birds; they would keep together in a large flock, and it required a long trip along shore to obtain the specimens I wished for.

Squatarola squatarola. — While returning along the beach to Millers to take the train home, I was fortunate enough to take an adult male of this rare migrant, which was in full breeding plumage. All of the above birds were taken at Millers in the afternoon of August 24, 1896.

Rissa tridactyla. — An adult male of this species was taken by Mr. Christopher Wagner, who was shooting from a boat on Lake Michigan near what is known as the Jack-knife Bridge, in Lincoln Park. The bird was purchased for the collection of the Chicago Academy of Sciences by Mr. Chas. M. Higginson.

Clangula islandica. — On December 11, 1896, I obtained two specimens of this bird on Lake Michigan, near the Daily News Sanitarium. I also shot a fine pair of *Harelda hyemalis*, which were the only ones of this species I observed that day. At the present writing, Feb. 3, there are hundreds of the latter species feeding among the ice floes off Lincoln Park.

Uria lomvia. — On December 31, 1896, I obtained a fine adult male of this species, which was shot by a Mr. McCoy, on the Iroquois River, Newton County, Indiana, about one and a half miles from the town of Foresman. — FRANK M. Woodruff, *Chicago Academy of Sciences, Chicago, Ill.*

Sundry Notes. — **Clangula americana.** AMERICAN GOLDEN-EYE. — A pair, the first seen this season, were observed in the harbor of Nantucket, Mass., Oct. 26, 1896; one was also seen Nov. 1; both early dates.

Merganser serrator. RED-BREASTED MERGANSER. — October 31 this species was here in greater numbers than usual.

Aythya marila. AMERICAN SCAUP DUCK. — I saw large numbers in Madaket harbor Nov. 1, — about one thousand (estimated) birds.

In passing through Nantucket Sound I saw, Nov. 11, about two thousand Old Squaws (*Harelda hyemalis*) in one body. I also saw a great many White-winged Scoters (*Oidemia deglandi*) in groups scattered over the sound; also a much less number of Surf Scoters (*O. perspicillata*). I did not observe any American Scoters (*O. americana*). I do not see many of the latter nowadays; they are getting to be a rather scarce bird on the Massachusetts and Rhode Island coasts.

Squatarola squatarola. BLACK-BELLIED PLOVER. — Four young birds were seen at Nantucket, Nov. 1; they were well up, flying towards the west. On Nov. 3, I saw one, also a young bird, and an American Bittern (*Botaurus lentiginosus*).

Puffinus stricklandi. SOOTY SHEARWATER. — Four were seen in company at Nantucket Sept. 3, 1896, as they passed by the south side of the island, flying towards the west.

Zenaidura macroura. MOURNING DOVE. — Two seen and shot one, the male, the stomach of which was forwarded to Mr. S. D. Judd, Washington, for identification of its contents, the result of which has been kindly sent

me by Dr. C. Hart Merriam, Chief of the Biological Survey, from whose letter I quote: "The bulk of the contents is grass seed (over two hundred seeds of one kind, *Panicum*, and a dozen of another, *Paspalum*). There was also a blackberry seed, a ragweed seed, and four quartz pebbles."

Dendroica vigorsi. PINE WARBLER. — While at the middle eastern portion of the island I saw, hopping about some bushes and fence rails, a lone Pine Warbler which I shot. It proved to be a young female in the first plumage.

Bartramia longicauda. BARTRAMIAN SANDPIPER. — A nest containing three eggs was found at Tuckernuck Island, June 22, 1896. It was located on the ground in a small bunch of grass, and was well concealed. The bird flew off the nest. I am told that the young leave the nest as soon as they are able to run.

Merganser serrator. RED-BREASTED MERGANSER. — One of my old shooting companions informed me that he saw thirteen Red-breasted Mergansers, in a flock at West Hampton, Great South Bay, Long Island, N. Y., July 29, 1891. They were in moult and could not fly. I think it probable they were birds that had been too badly wounded early in the season to migrate. — GEORGE H. MACKAY, *Nantucket, Mass.*

The most General Fault of the A. O. U. Check-List. — This is a serious matter which I have hitherto refrained from bringing up, partly on account of its hopelessness, in the present arrangement and numbering of the species, partly because it is to some extent a question of ornithological expertness regarding which opinions may reasonbly differ. But now, having occasion to retraverse the whole ground of North American ornithology, in the preparation of the Fifth Edition of my 'Key,' the blemish I shall point out obtrudes itself continually upon my attention; I cannot longer maintain the reticence I have hitherto preserved without seeming to condone the impropriety by tacit acquiescence; and I desire to put myself upon record in the matter, lest my silence be imputed to unrighteousness. This is the first general protest I make public on certain subjects concerning which I was often found in a more or less respectable minority of two or one, when various questions were put to vote for the official decision of the Committee over which I had for many years the honor to preside.

When we decided to embody the expression of our classificatory and nomenclatural wisdom in the concrete form of a Check-List, the question of the most eligible linear sequence of species, genera, and higher groups of course came up at the outset. All lists of our birds had before proceeded in time-honored fashion from the higher to the lower groups; and this high to low method had been invariably intended and implied, whether the Raptores or the Passeres were in fact considered highest. We proposed to reverse this order, and go from low to high — in other words, to turn such previous lists as those of Baird, Coues, or Ridgway "hind part before"; which proposition was carried into effect. I favored

and voted for it then, and heartily applaud it now; for, if not the most convenient, it is the most logical and biological procedure to pass from the 'lowest,' *i. e.*, the most generalized forms to those which are the most specialized, or 'highest'; such being apparently the 'natural' course of evolutionary processes. I also think we did the business well, on the whole; nobody doubts that our List passes from bottom to top of the avian series, about as smoothly as the families could be arranged in any single linear sequence — understanding, of course, that *no* one linear arrangement can possibly be natural, yet that *some* one such is a mechanical necessity of book-making.

Granting then, that we turned the series of orders and families hind part before in the best possible manner, or at least in a manner free from obvious objection, a very queer inconsistency crops up in our treatment of the *contents* of the numerous families. The same rule of reversal should of course have been applied to the genera and species of each family. But in point of fact such rule was not applied, in all instances at any rate. To put the case in a nutshell, we turned the list of families hind part before, but generally left the sequence of genera in each family as they had been in the previous lists I have named, which were modeled on the high to low principle. That this is a fact, anyone can satisfy himself by inspection of our Check-List; but the agitated searcher for light on this point may have to go through the whole of our work, before the full magnitude of our offence dawns upon him. I will put him on the track by citing a single case of what I mean, and he may follow up the investigation to any extent he pleases.

In the family Anatidæ, the general treatment of the subfamilies and genera had been, in those lists which went on the high to low order, to begin with the Swans or Geese, Anserinæ or Cygninæ; go on to the Anatinæ, which in fact inosculate with Anserinæ through the Shelldrake group, etc.; pass thence to the Fuligulinæ; and finish with the Merginæ. We use these identical subfamilies, and, as I think, advisedly; we also have after a fashion reversed their sequence, so that my criticism is to some extent weakened in this very case. But no one doubts the specially close connection of Merginæ with Fuligulinæ; assuredly these two subfamilies should come together. Instead of that we begin, correctly, with the Merginæ, as the 'lowest' members of the family; then jump directly to the Anatinæ; begin the Anatinæ with *Anas*, at the top of the list, and run the gamut of its genera from 'high to low,' in the good old-fashioned way; put *Aix* far from its obvious and undisputed position; pass on to Fuligulinæ and run *down* that list of genera to the Scoters, Eiders, and Erismaturine genera; whence we jump again with admirable agility but questionable propriety to the Geese proper, Anserinæ, and so on to the Cygninæ.

I am not here raising any real taxonomic question. I assume that we are in substantial agreement of opinion as to the natural relationships of the subfamilies of Anatidæ, but contend that their sequence in our List

violates that consensus — does not express our views. In this particular case, the sequence of subfamilies should have been Merginæ, (*Erismatura*, as perhaps type of another subfamily Erismaturinæ), Fuligulinæ, Anatinæ, (*Aix? Dendrocygna?*), Anserinæ, and Cygninæ.

This I regard as the most general fault of the A. O. U. Check-List — reversal of sequence of families, coupled with non-reversal, as a rule, of the sequence of genera within the families. If my criticism be pertinent, the case is of course incurable; the fault runs through and vitiates the whole performance as a constitutional vice which can only be eradicated by tearing the List to pieces and putting it together again in better form. The sooner we do this, the better for the good name of the A. O. U. among ornithologists of mature judgment.

The numeration of our species and subspecies, which we fondly hoped would be a fixture forever, already shows signs of that mutability which is incident, alas! to all human affairs. The numbers are already mixed up by transfers, changes of *a*, *b*, *c*, etc., or defective by eliminations, or redundant by additions. Confusion has begun already and now threatens to defeat measurably the purpose of those numbers. Several species and subspecies are no longer identifiable by the numbers they bear, for their numbers have been changed. Again, our system of numbering does not permit us always to interpolate additions to the list in the places where they belong. Take the genus *Melospiza*, for instance; or *Otocorys* (I refuse to write "*Otocoris*," as the birds are not bugs). The subspecies of *Melospiza fasciata* were lettered *a*, *b*, *c*, etc., to the best of our ability, in what seemed their proper order, at the time when only a certain number of them were known, but when certain other groups of subspecies came up, we had no alternative to tacking them on in the order of their discovery, not being able to interpolate them in their obviously proper places, without throwing *a*, *b*, *c*, etc., out of alphabet. It is true that some of these so-called 'forms' of *Melospiza* are figments of the imagination — airy nothings to which we have chosen to give 'local habitation and a name'; but this fact does not do away with the objection I raise, that they have entered our List out of their obvious proper order.

It is earnestly to be hoped that both the extant editions of the Check-List may be officially cancelled and formally repudiated in the near future; both being then superseded by a third List, drawn up anew. — Elliott Coues, *Washington, D. C.*

RECENT LITERATURE.

Ridgway's 'Manual of North American Birds,' Second Edition.[1] — Mr. Ridgway's excellent 'Manual,' originally published in 1887 (see review in Auk, IV, 1887, pp. 333–336), is so well known to the readers of this journal that little more is necessary in the present connection than to call attention to the points wherein the second edition differs from the first. Since the appearance of the first edition, as we learn from the new Preface, "91 species and subspecies have been added to the North American fauna"; of these 12 were included in the analytical 'keys' of the first edition, "and it has been necessary in these cases only to change the typography of the names and prefix the catalogue number of the American Ornithologists' Union 'Check List of North American Birds.' The remainder are given in reguiar order in the Appendix (pages 583–614), marginal reference numbers in the body of the work at once directing attention to the supplementary matter." We have thus a new Preface (pp. iii–vi), giving explicit directions for using the 'keys,' and an Appendix of 32 pages of mostly new matter. All typographical errors thus far detected have been corrected, but otherwise than as above indicated the main body of the work remains unchanged.

The Appendix, besides adding some 80 species and subspecies not given in the preceding pages, includes a number of eliminations, and many modifications of and additions to the original text. Thus, in respect to *Ardea wuerdemanni*, we have the following (p. 586): "*A. wuerdemanni* is probably an intermediate plumage connecting *A. occidentalis* with *A. wardi*, the three forms [being] doubtless merely color-phases of one species, for which *A. occidentalis* is the older name." Under the genus *Fulmarus* Mr. Ridgway states that he believes the "subspecies of *F. glacialis* are probably reducible to two, an Atlantic and a Pacific form. . . It is possible that had we good series of specimens *from all the breeding localities* of the species, the above mentioned supposed forms [*minor*, *glupischa*, *columba*, etc.] could be clearly defined; but I have very serious doubts whether their validity can be demonstrated otherwise." The additions include two new genera — *Arremonops*, type *Embernagra rufivirgata* Lawr., and *Oreospiza*, type *Fringilla chlorura* Aud. — and one new subspecies, namely, *Cardinalis cardinalis floridanus* (p. 606). Audubon's *Fringilla macgillivrayi* is revived as *Ammodramus maritimus macgillivrayi* (p. 602), with habitat "Coast of Louisiana; coast of Texas (Corpus Christi) during migration." There are also several corrections of names, *Sula gossi* Ridgw. becoming (p. 584) *Sula nebouxii*

[1] A | Manual | of | North American Birds. | By | Robert Ridgway. | — | Illustrated by 464 outline drawings of the generic characters. | — | Second Edition, | Philadelphia: | P. B. Lippincott Company. | 1896. — Royal 8vo, pp. i–xiii, 1–653, pll. i–cxxiv, and frontispiece, portrait of Prof. Baird.

Milne Edwards, and *Dryobates pubescen soreæcus* Batch. (p. 597) becoming *D. p. homorus* (Cab.).

The 'Manual' being thus 'brought down to date' is sure of another long career of usefulness, being not only well adapted to the amateur, but an invaluable reference work to specialists as well. — J. A. A.

Goode's 'The Published Writings of Philip Lutley Sclater.'[1] — This especially welcome 'Bibliography,' compiled under the direction of the late Professor Goode, and relating so largely to American ornithology, is fittingly issued as a publication of the United States National Museum, although the author is not an American in nationality. As said by Professor Goode in the Introduction: "The scope of this series [of bibliographies] would seem appropriately limited to the work of the naturalists living and working in America, but there is one exception which no one can doubt the propriety of making — that in the case of Mr. Philip Lutley Sclater, the secretary of the Zoological Society of London, who has confined his work for the most part to American ornithology, and whose contributions to the systematic ornithology of the American Continent have far exceeded in extent those of any one working in this country. His opportunities have been almost unlimited, and his utilization of these opportunities has been wonderfully effective."

The 'Bibliography' is preceded by a 'Biographical Sketch' (pp. ix–xix) of Mr. Sclater, which concludes with testimonials of appreciation from Dr. C. Hart Merriam, Mr. J. A. Allen, and Mr. Robert Ridgway. The 'Chronological Catalogue of Separate Works,' numbering 26 titles (pp. 1–4), forms Part I. Part II consists of 'A Chronological Catalogue of Papers published in the Memoirs, Proceedings and Journals of learned Societies, and other Periodicals' (pp. 5–73), and numbers 1205 titles, the first dated 1844, the last 1894, with an appendix (pp. 133–135) containing 37 additional titles of papers published subsequent to December, 1894, raising the total number of titles to 1287. These are compactly and clearly printed, two columns to the page, with sufficient annotation to indicate the scope and character of the papers.

Part III consists of a tabular 'List of New Families and Genera described' (pp. 75–78). The names are arranged alphabetically, and following the name is the name of the type species, the place of description, and a reference to the number of the paper in the bibliography. The list includes 'emended' names, as well as the names of new genera, the latter numbering 125!

Part IV contains a 'List of New Species described' (pp. 79–104), arranged in tabular form, giving locality, location of type, place of de-

[1] The | Published Writings | of | Philip Lutley Sclater, | 1844–1896. | — | Prepared under the direction of G. Brown Goode. | — | Washington: Government Printing Office. | 1896 = Bulletin U. S. Nat. Mus. No. 49. 8vo, pp. xix, + 135, frontispiece, portrait of P. L. Sclater.

scription, and the number of the paper in which they are described, as entered in the bibliography. The new names number nearly 1000, and are arranged alphabetically by genera.

Part V gives a tabular alphabetic 'List of Species figured' (pp. 105–119), over 1000 in all, with the place where figured, etc.

A detailed index (forming Part VI) to the principal subjects in the works and papers listed in parts I and II completes this admirably planned and carefully executed bibliography of a most exceptionally extended series of works and papers.

Mr. Sclater's papers here catalogued relate by no means exclusively to American birds, for they include many papers on the birds of the Old World, and on general subjects in ornithology, and a very large number treating of mammals, and include figures of many rare species from the Gardens of the Zoölogical Society. The Bibliography will thus be of great service to mammalogists, as well as of immense utility to students of American birds. An excellent portrait of Mr. Sclater is given as a frontispiece to the volume. — J. A. A.

Newton's Dictionary of Birds: Part IV.[1] — This noble work must be already well-known, by name at least, to all readers of 'The Auk,' for the three previous Parts have been duly noticed as they successively appeared. Its completion with Part IV gives occasion for congratulations. But whether these be now in order for its distinguished author alone is another matter. We congratulate him upon this successful accomplishment of long-cherished designs; upon this fruitage of well-laid plans for the promotion of the science he adorns; upon well-earned respite from arduous labors, at least for a time. Yet is every ornithologist, be he the

[1] Part I, A–Ga, pp. i–viii, map, pp. 1–304, 1893. Part II, Ga–Moa, title-leaf and pp. 305–576, 1893. Part III, Moa–Sheathbill, title-leaf and pp. 577–832, 1894. Part IV, Sheathbill–Zygodactyli, title-leaf (verso instructions to binder) and pp. 833–1088 + Half-title, Title, Dedication, Preface, Notanda et Corrigenda = pp. *i–xii* + Introduction = pp. *1–124*, 1896.

For previous notices, see Auk, July, 1893, p. 308; Oct. 1893, pp. 357–360; Jan. 1894, pp. 56–60; Apr. 1895, pp. 169, 170. The permanent title and collation are:

A | Dictionary of Birds | by | Alfred Newton | assisted by | Hans Gadow | with contributions from | Richard Lydekker | Charles S. Roy | . . . and | . . . London | Adam and Charles Black | 1893–1896 | 1 vol. 8vo. pp. *i–xii* (Half-title, Title, Dedication, Preface, Notanda et corrigenda), pp. *1–124* (Introduction and Index thereto), pp. i–viii (Title to Part I, Note, etc.), 1–304 (Alphabet), Title to Part II and pp. 305–576 (Alphabet, with map opp. p. 311), Title to Part III and pp. 577–832. (Alphabet), Title to Part IV and pp. 833–1058 (Alphabet), pp. 1059–1088 (Index); unnumbered figg. in text. Printed by R. & R. Clark, limited, Edinburgh. Orig. Note to Part I dated March, 1893. Preface dated Nov. 1896. Publication completed Nov. or Dec. 1896.

timid tyro or the confident master of his craft, to be congratulated, not the less but rather the more heartily than the author, upon the possession of such a hitherto unexampled work as Professor Newton's 'Dictionary'; for it is far and away the best book ever written about birds.

Lest this judgment be imputed to the personal prejudice of an almost life-long friend of the author, and regarded as panegyric rather than sober statement, it behoves us to define what we mean by that elastic superlative — "the best." In weighing the merits of any considerable performance, the principle of the greatest good to the greatest number comes up first. A work may be of the greatest excellence in a particular way, or for a special purpose; in which case the good it can possibly do is restricted accordingly — like that mathematical treatise which was said to be so learned that only its author and one other person could have understood it, had the latter not been ignorant of the language in which it was composed. This is an instance of the greatest good to the fewest possible number; it is the opposite extreme of a Newton's 'Dictionary' — a work by which no one who can read English can fail to profit, so be it he have intelligence enough to know what he wants, or what, at any rate, he ought to want to know. It is upon some considerable acquaintance with the literature of ornithology, acquired in the course of forty years, that we declare the present to be the best 'all-round' book we have ever seen; the one that best answers the purposes of the most readers; the one which conveys the most information per thousand *ems;* the one which is freest from misstatements of any sort; the one which is most cautious and conservative in expression of opinions where opinions may reasonably differ; the one which is the most keenly critical, yet most eminently just in rendering adverse decisions; the one which is composed in the plainest and purest English, if we except some of the maturest writings of Huxley — "that so great a master of the art of exposition"; the one which is the most erudite and the least pedantic; the one of the most distinctively academic flavor, yet most kindly regardful of the limitations of a *profanum vulgus.* It is a wise, a courteous, a dignified book; such a fruit of ripe scholarship as almost justifies the Fabian policy Professor Newton is well known to have seldom failed to pursue in cultivating the acquaintance of his printers. One of the ends, among many, which crown this work is the justification of making haste slowly; and another is the perpetual injunction which this 'Dictionary' serves upon a generation of ornithological scientists and sciolists, among neither of which classes of writers is cocksureness a quality to be sought in vain. It is far too masterly a work to be acceptable in all quarters, for various reasons; some of which reasons being, that it accentuates the difference between workmanship and amateurishness; administers a wholesome "corrective to the erroneous impressions commonly conveyed by sciolists posing as instructors"; sets up a standard of excellence which many writers may shrewdly despair of approaching; and thus burns bridges over the great gulf fixed by natural selection between the fit and the unfit to handle the pen.

Among various merits which a literary performance may possess that of sheer utility is surely not to be despised. The present reviewer, for example, is far enough along in the business of writing about birds to have entertained grave doubts concerning his own omniscence or infallibility, and to be very much obliged indeed for information that he lacks. During the past few years he has made much ornithological manuscript, the outcome of which at present concerns nobody but himself. During a like period, one or more Parts of this 'Dictionary' has lain or have lain upon his desk, instead of standing upon his shelves; and he has acquired the habit of saying to himself, upon taking up the pen of a morning, before shedding ink upon any topic of the day, "I wonder what Prof. Newton has to say about that?" Ten to one, he has found something he wanted, if it were only a reliable date, or a right spelling, or a name he never knew before, or an exact definition, or a sound etymology, or bit of early history — or whatnot in the way of positive, reliable information. Ten to one, again, in looking for something he wanted, he found something else he should have wanted had he fully realized his own obtuseness; and one thing led to another, till he had been reading the 'Dictionary' all the morning instead of minding his own business. He therefore warns all users of the 'Dictionary' that his case is not likely to be singular! But he feels also quite certain that some considerable time of every intending writer upon birds can in nowise be more pleasantly or more profitably spent than in informing himself of what Professor Newton has already set down concerning them; and if it be happily true that "the written word remaineth" in the mind of the would-be writer, there can be no reasonable doubt that his own performance will be improved accordingly. This is a test of usefulness to which only a thoroughly good book can be put without detriment to its reputation; yet this 'Dictionary's' credit will increase with every such trial to which it may be subjected.

The 'shortcomings' of the 'Dictionary' are innumerable, being no fewer than the number of all the names which exist in ornithology, but which are not entered alphabetically in this work. They are the lengths to which the author did not see fit to go, and as such are best dismissed in his own words (Preface, pp. *vii, viii*):

"It has been my object throughout to compress into the smallest compass the information intended to be conveyed. It would have been easier to double the bulk of the work, but the limits of a single volume are already strained, and to extend it to a second would in several ways destroy such usefulness as it may possess. . . . It will be obvious to nearly every one that the number of names of Birds included in a work of this kind might be increased almost indefinitely. Whether it will ever be possible for me to supply these additions, and others, must depend on many things, and not least on the reception accorded by the public to the present volume."

As touching this contingency, with its implicit promise, we may express our gratification at seeing the 'Dictionary' advertised for sale in

this country by the Macmillan Company of New York; and repeat our already expressed opinion that it is the best book ever written about birds. No ornithologist, no person who desires or intends to become one, can afford to be without it. We wish that we could record our conviction that its reception by the public will be according to its merits; but that seems improbable, for mediocrity has no means of measuring pre-excellence.

Recognizing fully, as we do, the inexorable limits of a single volume, we have no disposition to find fault with anything that this 'Dictionary' does not contain; and even if the principles upon which Professor Newton has made up his alphabet are not always clear to us, we are quite ready to believe them judicious, or best for the end he had in view. We are thankful for all that is implied by the admission of our Koel or our Paauw, though we may have to look elsewhere for the difference, if any there be, between a Thrush-Titmouse and a Titmouse-Thrush. It is enough to add that we are not here concerned with a Giebel, but with a Newton; and long-protracted lexicographic work of our own has satisfied us that the author need not have recorded any reason for moulding the main body of his treatise dictionary-wise — not even so good a reason as the following (prefatory Note, p. vii):

"I would say that the alphabetical order has been deliberately adopted in preference to the taxonomic because I entertain grave doubt of the validity of any systematic arrangement as yet put forth, some of the later attempts being in my opinion among the most fallacious, and a good deal worse than those they are intended to supersede."

Considering the attention already bestowed upon Parts I–III of the 'Dictionary' by a competent critic ("J. A. A."), whose final office we here usurp at his own instance, and agreeing cordially with the tenor of his reviews, we may confine ourselves in the remarks which follow to consideration of Part IV, which carries the alphabet from *Sheathbill* to *Zygodactyli* — why not to *Zygoma* being explicable as above. It would be unnecessary, even were it reasonably practicable within the limits of a review, to scrutinize the list of entries in detail; especially as there is much we wish to say regarding the 'Introduction'. Suffice it to observe no falling off, whether in fullness, accuracy, or elegance of treatment, from the high standard of excellence set in the beginning, but rather the reverse; for, as is usual in similar cases — we cannot say, in such cases, because this one stands alone — the work *crescit eundo*, and many of its most notable articles fall in the latter part of the alphabet. Opening Part IV at random, we happen upon *Toucan*, p. 976, followed by *Touraco*, pp. 979–982, both being among the longer articles. These two words have histories which go back in the one case to 1668 at least, in the other beyond 1743; the birds themselves have been known still longer under other names; and each belongs to a notable family. Their treatment is a fair sample of Professor Newton's conspicuous ability in so handling subjects, both historically and ornithologically, as to convey the most

information, of the sort desired by most persons, in the smallest compass. Next comes *Towhee*, a minor article, on a part of one page, with an explanation of the word, identification of the bird, a figure of its head from Swainson, remarks on the species of *Pipilo*, references with the usual small capitals to FINCH, BUNTING and CATBIRD (which the cry of some species calls up), and the synonyms of Chewink and Ground-Robin (though we miss 'Joree,' a less known nickname of *P. erythrophthalmus*). Next comes *Trachea*, a 2½-page article by Dr. Gadow defining that organ, and noting its main modifications in many different groups of birds, with cross-references to *Larynx* and *Syrinx*. Next happens to come *Tracheophones;* we give it as a model of curt, formal definition, in a case where the author has nothing further to say:

"TRACHEOPHONES (by some written *Tracheophonæ* or *Tracheophoni*) Johannes Müller's name (*Abhandl. k. Akad. Berlin, Phys. Kl.* 1847, p. 367) for the second of his three groups of PASSERINI, having the trachea furnished with one or two pairs of vocal muscles, and those lateral (*cf.* SYRINX, p. 940)."

These examples must suffice. To go through any considerable portion of this 'Dictionary', applauding the author's strong and clear statements of fact, would be futile, after what has been said; and to pick up for discussion or criticism his expressions of opinion (which he sedulously distinguishes from statements of fact) in cases where they may differ from our own, or be open to revision, would be fatuous; for that would be to write another, and presumably a much inferior, treatise upon the same subjects. Nor have we any intention, in reviewing a work the equal of which for accuracy we have not seen before in any instance of similar magnitude, of pricking pin-holes; that may be left to literary chiffonniers whose tastes differ from our own, and who have possibly time to waste. We finish this very inadequate sampling of the alphabetical entries by calling attention to the Index with which the work concludes — a valuable feature, which theoretically should be superfluous in a 'Dictionary,' but which in this case goes far toward obviating an inconvenience of which some may justly complain — that resulting from comparative fewness of the entry-words. Thus, for examples: *Tubinares* is entered, with a 4-line definition, including cross-references to *Albatross* and *Petrel*; but the Index gives under *Tubinares* 32 places where something may be found about the birds which come under that head. *Upupa* is not entered, as Latin generic names, when not English also, are not within the scope of the work for formal entry; but under *Upupa* in the Index are 24 references to pages where birds of that genus are treated in the text.

The most important article in the whole work is the Introduction, now supplied with Part IV, of course to be bound in its proper place, as above indicated. This, with the Index to itself, runs pp. *1–124* (slanting Arabic figures, as if italics, to distinguish this matter from pp. 1–1088 of main text). It is difficult to characterize this piece of work justly without

using words which may seem to be extravagantly laudatory. Perhaps we may say simply, by way of conveying our appreciation of its real merit, that only one ornithologist who has ever lived, or who is now living, could have written it. In purport and scope, it is a critical review of ornithology, from the start to such degree of finish as the science has acquired today; in substance, it is a summary bibliography of those works upon which the foundations of the science rest most securely, and of those which have most contributed to its permanent superstructure — 'each after its kind' being set forth in chronological order, in proper historical perspective, with due regard for symmetrical proportion; in form, by which we mean its literary style, it is a model to be admired by all but successfully imitated by none. Professor Newton's ripe scholarship has perhaps never been more adequately shown than on this occasion, when only a master of the art of exposition, who combined in himself the qualities of a great ornithologist and a great bibliographer, could have brought his forces to bear upon the business in hand with the requisite lucidity and precision. The literature of ornithology is so huge — indeed, Professor Newton speaks of the science as in danger of being smothered thereunder — that one might well be dismayed in face of any undertaking to set it forth intelligibly, with hardly more than a hundred pages at command in which to accentuate its strong points and stigmatize its weak or futile ones, with even-handed justice throughout — so almost incessant, in this case, must have been the temptation to mercy. For performances whose chief or only merit may be found in those good intentions with which a certain mythical locality is said to be paved, Professor Newton's good-nature is unfailing, as his patience is unwearied. But for the sciolists and shams of whatever low degree, for the posers and plagiarists of whatever high pretentions, for any writers whose good faith may be questioned or whose good opinion of themselves is vanity — *væ victis!* The schoolmaster is abroad, and his ferule is felt to be a stinging one. For pith and pungency Professor Newton's criticisms compare not unfavorably with Huxley's. They are equally pointed and polished; they are passed with equal courtesy and dignity; they are generally tempered with some saving clause, whether to be passed to the credit of the critic's charity or of his ingenuity we cannot always say; but he seldom presents the chastening rod in one hand without holding out a box of ointment in the other. It reminds us of Kamadeva, the Hindu Eros — him of the bee-strung bow, whose keenest shafts were tipped with roses.

In so phrasing his parable the present reviewer feels sure he voices no sentiments unshared by others of his own craft. Referring to the article 'Ornithology' in the Ninth Edition of the 'Encyclopædia Britannica' — it is well known that the present 'Dictionary' is founded upon the series of articles contributed by Professor Newton to that publication, modified into something like continuity, and further built up by the intercalation of a much greater number, to serve the same end — a distinguished leader

of our science lately opened an address he delivered to the Congress at Budapest in the following words, in part:

"From the time of our great master, Linnæus, and even from that of the patriarchs of Science, Professor Newton traces the gradual development of Ornithology; and not only do I find little to add to this masterly treatise, but my very criticisms are there forestalled, and I offer this tribute to the genius of my talented countryman, not without a slight feeling of envy at the vigorous English in which the memoir is composed, and the truly wonderful way in which his facts are marshalled and arranged. With some regret, therefore, I have laid aside my exposition of the various schemes of Classification which I had intended to place before you, because I feel that I could not say anything which Professor Newton has not said ten times better; and although his article may not be 'milk for babes,' by the earnest devotee of Ornithology it will be read with intense interest."

To whatever school, 'old' or 'new,' Dr. Sharpe may be held to belong, this shows that our eminent colleague also knows the good wine which needs no bush; and we should not protract the present review were all as well qualified to pass judgment as he is, or were Professor Newton's 'Dictionary' as well known to the rank and file of American ornithologists as we trust it may speedily become — albeit the luxury of praising that which may be justly praised without stint is ours in the present instance, and one which we propose to enjoy yet further, before we put a period to its expression. We wish to show, if possible, how Professor Newton has accomplished the apparently impossible feat of profitably reviewing ornithology as a whole in 120 octavo pages. He first notices pretty thoroughly the chief ornithological works begun if not completed before the beginning of the present century — not an extremely difficult task, though it consumes one-sixth of his allowable space (pp. *1–21*). With the present century began — or began to multiply — three different classes of works, namely: Faunæ, Monographs, and publications of scientific societies. With the last of these he cannot undertake to deal, "except they be of prime importance." The monographs come next for treatment, including great works on special groups of birds, generally illustrated with plates to which the text is more or less a secondary consideration. These are disposed of on pp. *21–28*. Attention is then turned to general and particularly to systematic works in which plates, if they exist at all, form but an accessory to the text — works such as those of Illiger, Vieillot, Temminck, and so on to Gray and Giebel. In this connection Professor Newton does not hesitate to kill the circle-squarers — Macleay, Vigors, and Swainson — over again; he handles them as one might unruly children caught making mischief, and we cannot refrain from giving a quotation (pp. *34, 35*):

"True it is that there were not wanting . . . men in these [British] islands whose common sense refused to accept the metaphorical doctrine and mystical jargon of the Quinarians, but so strenuously and persist-

ently had the latter asserted their infallibility, and so vigorously had they assailed any who ventured to doubt it, that most peaceable ornithologists found it best to bend to the furious blast, and in some sort to acquiesce at least in the phraseology of the self-styled interpreters of Creative Will."

That is an example of the chastening rod to which allusion has been made. With it comes the unfailing box of ointment we also mentioned:

"But, while thus lamenting this unfortunate perversion into a mistaken channel of ornithological energy, we must not over-blame those who caused it. Macleay indeed never pretended to a high position in this branch of science, his tastes lying in the direction of Entomology; but few of their countrymen knew more of Birds than did Swainson and Vigors; and, while the latter, as editor for many years of the *Zoological Journal*, and the first Secretary of the Zoological Society, has especial claims to the regard of all zoologists, so the former's indefatigable pursuit of Natural History, and conscientious labour in its behalf — among other ways by means of his graceful pencil — deserve to be remembered as a set-off against the injury he unwittingly caused."

A rapid survey of Faunal works is next taken, carrying the subject to p. *45*. This is necessarily limited "to those countries alone which form the homes of English people, or are commonly visited by them in ordinary travel." In this retrospect American Faunists will find themselves at full proportionate length.

But the main burden of the Introduction, carried almost to its end, is the review of modern systematic Ornithology, "to trace the rise of the present more advanced school of ornithologists whose labours, preliminary as we must still regard them to be, yet give signs of far greater promise" (p. *45*). A difficult task is here self-imposed at the start; it is one of peculiar delicacy toward the finish, when living contemporaries, often but not always friends, sometimes pupils, must be brought to book to answer for their performances. Professor Newton's idea is, to set forth those works and those persons he considers to have rendered the most solid service in constructing an enduring morphological *Systema Avium* upon the principle of genetic relationships, in accordance with accepted theories or proven facts of evolution. We can possibly indicate by a bare list of names the course which Prof. Newton's treatment of this theme takes. The leading names are: Nitzsch — Étienne Geoffroy St.-Hilaire — Tiedemann — Nitzsch — Merrem — De Blainville — Nitzsch — Nitzsch apud Naumann — L'Herminier — Nitzsch — Berthold — Cuvier — Gloger — Sundevall — L'Herminier — Macgillivray — Owen — Blyth — J. F. Brandt — Keyserling and Blasius — Nitzsch ed. Burmeister — Kessler — Macgillivray apud Audubon — J. Müller — Cornay — Cabanis — Bonaparte — Hogg — E. Newman — Gervais — Blanchard — Eyton — A. B. Meyer — Des Murs — Darwin and Wallace — Parker — A. Wagner — Lilljeborg — Huxley — A. Milne-Edwards — Marsh — Sundevall — Reichenow — Garrod and Forbes — Murie — Wallace — Sclater — Stejneger — Fürbringer —

Gadow — but here we must put a period, at p. *108* of the Introduction. Most of these names will convey their own moral to every well-informed ornithologist, as readily as Merrem calls to mind *Ratitæ* and *Carinatæ*, or Nitzsch brings up pterylography. But not all of them stand in the pantheon — Berthold, for example, is dismissed with a sigh of relief, and some others with even less emotion. In general, the space devoted to each indicates fairly their weight in the scales of Professor Newton's judgment, for he is not here setting up small authors to be cast down, but great ones to be attentively regarded in the light of their respective contributions to the edifice of the future; and he must be indeed an exceptionally well-informed ornithologist who has not much to learn of the exact quantity and quality of these contributions from this masterly exposition. We have spoken of its great difficulty and extreme delicacy in some cases; we testify to its equal discernment and perfect fairness; and offer two cases in evidence.

Huxley is treated in five pages (pp. *82–86*), chiefly devoted to his paper of 1867, with this conclusion, as we think agreeable with a consensus of expert opinion:

" . . . That the palatal structure must be taken into consideration by taxonomers as affording hints of some utility there could no longer be a doubt; but the present writer is inclined to think that the characters drawn thence owe more of their worth to the extraordinary perspicuity with which they were presented by Huxley than to their own intrinsic value, and that if the same power had been employed to elucidate in the same way other parts of the skeleton — say the bones of the sternal apparatus or even of the pelvic girdle — either set could have been made to appear quite as instructive and perhaps more so. Adventitious value would therefore seem to have been acquired by the bones of the palate through the fact that so great a master of the art of exposition selected them as fitting examples upon which to exercise his skill."

Sundevall's case is perhaps the most remarkable among those Professor Newton is called upon to weigh. *Mutatis mutandis*, it presents to our eye some likeness to that of Macgillivray. The latter was an excellent ornithotomist to whom Professor Newton gives well-deserved praise for his observations, but who utterly failed to interpret his anatomical facts to any useful taxonomic purpose, his classification being nugatory. Sundevall was a man of vast and varied acquirements, the opposite of Macgillivray in that he was a 'skin man' *sang pur*, whose final achievement in classification was no better than Macgillivray's, if as good. But let us hear Professor Newton on this score (p. *90*:)

"The only use of dwelling upon these imperfections [to wit, of Sundevall's *Tentamen*] here is the hope that thereby students of Ornithology may be induced to abandon the belief in the efficacy of external characters as a sole means of classification, and, seeing how unmanageable they become unless checked by internal characters, be persuaded of the futility of any attempt to form an arrangement without that solid foundation which can

only be obtained by a knowledge of anatomy. Where Sundevall failed no one else is likely to succeed; for he was a man gifted with intelligence of a rare order, a man of cultivation and learning, one who had devoted his whole life to science, who had travelled much, studied much and reflected much, a man whose acquaintance with the literature of his subject probably exceeded that of any of his contemporaries, and a man whose linguistic attainments rendered him the envy of his many friends. Yet what should have been the crowning work of his long life is one that all who respected him, and that comprehends all who knew him, must regret, though apart from his systematic treatment his handiwork is admirable."

Most of Professor Newton's criticism in this part of his work is constructive — that is to say, it is concerned with the building up of the good, not the pulling down of what he considers bad; for bad work or bad workers hardly appear here, unless it be to be brushed aside in a word. Yet it is perhaps but fair to place in juxtaposition with the above an example of unmitigated severity (p. *44*):

"By every well-informed ornithologist the *History of British Birds* of Mr. Morris has long been known to possess no authority; but about Mr. Seebohm's volumes with the same title there is much difference of opinion, some holding them in high esteem. The greater part of their text, when it is correct, will be found on examination to be a paraphrase of what others had already written, for even the information given on the author's personal experience, which was doubtless considerable, extends little or no further. But all this is kept studiously out of sight, and the whole is so skilfully dressed as to make the stalest observations seem novel — a merit, I am assured, in some eyes. Of downright errors and wild conjectures there are enough, and they are confidently asserted with the misuse of language and absence of reasoning power that mark all the author's writings, though the air of scientific treatment assumed throughout has deluded many an unwary reader."

There is of course no balm in Gilead for a wound like that; though in another place (p. 734 of Alphabet, note), where Professor Newton castigates poor Seebohm with less acerbity for his fantastic sciolism in the taxonomy of *Limicolæ* the saving clause comes: "Yet the many beautiful figures given by Mr. Seebohm will always make his work acceptable to ornithologists of all schools, despite his numerous vagaries."

It were needless to add, after what has preceded, that Professor Newton is fully committed to morphological taxonomy on evolutionary principles. We should hardly think any different view could be taken by a competent scientist of the present day. The assumed distinction between external and internal characters is absurd; they are parts of one structural integer, and if the insides of a bird prove more valuable for classificatory purposes than its outside, it is simply because there are more of the former than there is of the latter available for examination and interpretation. Most of the authors above listed will immediately be seen to have been anatomists; and we note with pleasure Professor

Newton's insistence upon the importance of taking a bird's whole structure in consideration in the attempt to fix its position in a natural genetic classification. Such insistence is well exemplified in the care Professor Newton takes to place in their proper light Professor Fürbringer's recent remarkable contributions to systematic ornithology (pp. *100–103*), together with those of Dr. Gadow — neither of whom is so well known, in this country, as each deserves to be.

The remainder of the Introduction is devoted to what may be deemed the present outlook for the taxonomy of the future. Those who did not know Professor Newton's extreme caution and conservatism might perhaps expect to find him propounding a system of his own; but such will look in vain. We have carefully guarded statements on many points which seem to have been established; but beyond these Professor Newton is unprepared to go. Audacity and even temerity have their uses, on some occasions, but the construction of an Avian phylum is not among the opportunities for a profitable display of such qualities — tempting and alluring though the prospect may seem to some ardent minds. The geological record remains to this day altogether too incomplete. No one has yet flown to the Jura except on the wings of the imagination; and until a safer mode of progression in that direction be opened, with a plentiful supply of the still missing links for stepping-stones, the natural classification of birds will remain a vision of Utopia.

We should not close this tribute to the great work of a great ornithologist without recognition of those by whom he has been so ably aided in its execution — in ornithotomy by Dr. Gadow, whose contributions are conspicuous throughout the volume; in palæornithology by Mr. Lydekker; in other lines by Professor Roy; certain other contributions we do not see fit to name being fortunately too few and too insignificant to appreciably detract from the standard of excellence elsewhere maintained throughout the 'Dictionary.'— E. C.

Bates's 'The Game Birds of North America.'[1] — Mr. Bates's definition of a game bird is the following: "A game bird is one which is suitable for food and which is habitually pursued for sport, demanding skill and dexterity for its capture. I take it for granted that every sportsman is a gentleman, and would not slaughter more game than he could find a use for, and that he would not descend to the level of the pot-hunter, who will kill Robins and other insectivorous birds simply because they are fit to eat." The book is intended as "a convenient reference list adapted to the sportsman's needs without compelling him to wander among a mass of useless matter." Judged by this standard the author has apparently prepared a handy book for the intelligent sportsman, whereby he may in most

[1] The Game Birds | of North America | A Descriptive Check-List | By | Frank A. Bates | President "Boston Scientific Society," and formerly | Associate Editor "Ornithologist and Oologist." | Illustrated | Boston | Bradlee Whidden | 1896—16mo, pp. 118.

cases, doubtless, easily learn the names of the game birds that fall before his gun. The few outline figures of bills and feet given in the text must be of service in aiding in the determination. In most cases about a page is devoted to each species, consisting of a more or less detailed description, followed by remarks on distribution, habits, and quality of the flesh as food. In all 124 species and subspecies are formally treated, beginning with the Loons and ending with the Passenger Pigeon. The few technical inaccuracies here and there need not necessarily detract from the value of the book for the class for which it is intended. — J. A. A.

Butler on a Century of Changes in the Aspects of Nature in Indiana.[1] — As the title indicates, this paper is not exclusively ornithological, but contains, among much matter of general interest, several passages that depict the changes in the bird fauna of Indiana due to the occupation of the country by the white man, — the marked decrease or practical extirpation of some species, and the increase and changes in habits of others. Among the species "almost, or in great measure, exterminated" are the Wild Turkey, Bobwhite, Ivory-billed Woodpecker, Black Vulture, Carolina Paroquet, and Passenger Pigeon. Of the latter Mr. Butler writes, after detailing the methods of slaughter: "Less and less the numbers grew. Trapping and netting, supplemented by repeating guns, added to the power of destruction, and the Pigeons, whose numbers were once so great that no one could conceive the thought of their extinction, have dwindled until they are rarely found. One Pigeon in a year! Soon they will be but a memory" The distruction of birds to supply the demands of fashion also receives attention as one of the causes that have led to their decrease. — J. A. A.

Elliot's Catalogue of a Collection of Birds from Somali-Land.[2] — While the main object of Mr. Elliot's expedition into Somali-Land, under the auspices of the Field Columbian Museum, was to procure specimens of the mammals inhabiting that country, quite a collection of birds was also incidentally obtained, a report on which Mr. Elliot has thus promptly published. He states that he was never in a country "where birds were more numerous and tame, and an expedition properly equipped for bird collecting, could procure a very large series of specimens in a very short time." The collection formed by Mr. Elliot's party numbers 125 species, of which 8 are described as new. The annotations include interesting field notes on the habits and relative abundance of many of the species, together with some technical and other notes. — J. A. A.

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[1] Indiana: A Century of Changes in the Aspects of Nature. By A. W. Butler. Proc. Indiana Acad. Sci., No. V, 1895, pp. 31–42.

[2] Catalogue of a Collection of Birds obtained by the [Field Columbian Museum] Expedition into Somali-Land. By D. G. Elliot, F. R. S. E. Field Columbian Museum Publication 17. Ornith. Series, Vol. I, No. 2, pp. 29–67. Chicago, Feb., 1897.

Anderson's Birds of Winnebago and Hancock Counties, Iowa.[1] — This is a carefully annotated list of 218 species, based on six years' observations by the author, mainly in the immediate vicinity of Forrest City, Iowa, about seventeen miles south of the Minnesota boundary, and on the meridian of Des Moines. Two pages of introduction describe the topography of the region. The author states that "no species is enumerated of which the identification is doubtful," most of the species having been personally observed or collected by him. Credit is given to other observers for notes on several species which have escaped his notice. In a list so generally free from typographical errors, it seems strange to see *Dendroica* spelled *Dentroica* in each of the nine cases when it is used. — J. A. A.

Ricker's Notes on the Birds of Hull, Mass.[2] — The *raison d'être* of this annotated list of some 76 species is not very evident, based, as it admittedly is, on rather limited observations. Hull is of course a very restricted locality, and not especially favorable for birds, which may to some extent account for the very small number of species here recorded. The list contains nothing noteworthy on account of rarity or otherwise, while many of the species are not very positively identified. — J. A. A.

Howe's Birds of Brookline, Mass.[3] — One hundred and thirty-six species have been noted during the last six years within the town limits of Brookline, Mass. The list is briefly annotated, from the notes of Mr. Howe and five other well known observers. The haunts of a number of species have been recently destroyed, and the birds forced to seek other resorts; yet 72 species are recorded as regularly breeding within the town limits, and 47 occur as regular migrants. — J. A. A.

Tegetmeier's 'Pheasants.'[4] — This authoritative manual, now in its third edition, has long been recognized as a standard work on the hatch-

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[1] An Annotated List of the | Birds | of | Winnebago and Hancock Counties, Iowa. | —Being a List of Birds Observed in the Counties of | Winnebago and Hancock, State of Iowa, with Brief | Notes on the Same. | — | Forest City, Iowa. | Printed by the Author. | 1897. — 16mo, title page, pp. i, ii, 1–19.

[2] Notes on the | Birds of Hull | Massachusetts, | by Everett W. Ricker. | Illustrated. | Newtonville. | C. J. Maynard. | 1896. — 16mo, pp. 36, with 3 col. pll., and several figs. in text, some colored.

[3] Birds of Brookline, Mass. A list prepared by Reginald Heber Howe, Jr. Fol., pp. 2, Jan., 1897.

[4] Pheasants | their | Natural History and Practical Management. | By | W. B. Tegetmeier | (Member of the British Ornithologists' Union), | Author of "The Natural History of the Cranes," "Table and | Market Poultry," Etc., Etc. | [Design.] Third Edition, Enlarged. | Illustrated from Life by Messrs. J. G. Millais, T. W. Wood, | P. Smit, and F. W. Frohawk, Etc. | London: | Horace Cox, | "The Field" Office, Bream's Buildings, E. C. | — | 1897. | (All rights reserved.) — 8vo, pp. xii, 237, pll. 16.

ing, rearing, and treatment of Pheasants in captivity. A dozen species and several interesting hybrids are beautifully illustrated in the 16 fine plates that accompany the text, one of which shows the Argus Pheasant displaying its plumage. The principal subjects treated are the 'Natural History of Pheasants,' 'Management in Preserves,' 'Management in Confinement,' 'Diseases of Pheasants,' 'Pheasants adapted to the Covert,' and 'Pheasants adapted to the Aviary.' No species of Pheasant seems susceptable to domestication, like the common fowl; even when bred in aviaries for generations they retain their original wildness, and when set at liberty "betake themselves to the woods and coverts as soon as able to shift for themselves." Mr. Tegetmeier refers to the successful introduction of the Ring-necked and Golden Pheasants into Oregon, where they have become thoroughly acclimatized; but he seems to take a too sanguine view of the case of the English Pheasant, introduced in the Eastern States, or to have been misinformed, when he states it "is generally regarded as the future game bird of the country," etc. (p. 38)—J. A. A.

Bird-nesting with a Camera.[1] — The second part[2] of Mr. Lee's admirable work is fully up to the standard of excellence set by Part I,—higher praise cannot be accorded it.

The nests of the following species are herein figured and described: (1) Coot (*Fulica atra*), two plates; (2) Shoveler (*Spatula clypeata*); (3) Kittiwake Gull (*Rissa tridactyla*); (4) Waterhen (*Gallinula chloropus*), two plates; (5) Willow Wren (*Phylloscopus trochilus*); (6) Sandwich Tern (*Sterna cantiaca*), and (7) Sheld-Duck (*Tadorna cornuta*), two plates. — F. M. C.

A List of the Birds of Florida.[3] — This is a nominal list of the birds of Florida, enumerating 352 species and subspecies, and will doubtless prove a convenient Check-List to students of Florida birds. The following species have apparently been overlooked: *Buteo borealis harlani* (see Bendire, Life Histories of N. A. Birds, Part I, p. 218); *Spiza americana* (see Beckham, Bull. N. O. C., VII, 1882, p. 250); *Dendroica dominica albilora* (see Scott, Auk, XII, 1890, p. 20); *Sylvania canadensis* (see Allen, Bull. Mus. Comp. Zoöl. II, 1891, p. 269); *Seiurus noveboracensis notabilis* (see Brewster and Chapman, Auk, VIII, 1891, p. 135). — F. M. C.

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[1] Among British Birds in their Nesting Haunts. Illustrated by the Camera. By Oswin A. J. Lee. Part II. Edinburgh. David Douglas. Folio, pp. 41–77, pll. x.

[2] For a notice of Part I, see this journal, Vol. XIV, 1897, p. 106.

[3] A List | of the | Birds of Florida | By Charles B. Cory | For sale by | Bradley Whidden | 18 Arch St. Boston. | 1896 — 8vo, pp. 24.

Cory's List of the Birds of Eastern North America.[1] — This "list includes all birds which are known to occur in North America east of the ninetieth meridian." It is very slightly annotated with reference "to species which occur in New England, Illinois, and Florida. Taking these States to form the points of an imaginary triangle, a somewhat crude idea of the range of species which occur within this area may be obtained," etc. The annotations generally consist of the use of the abbreviations "N. E.", "Fla.", and "Ill.", one or all, as the case may require except in the case of species of casual or accidental occurrence, when the nature of their presence is indicated. The 'List' includes 570 species and subspecies, the nomenclature and arrangement being that of the A. O. U. Check-List; the species are numbered consecutively, the equivalent numbers of the A. O. U. Check-List being added in parenthesis. Of the 570 species listed, 104, or about 18 per cent, are of casual or accidental occurrence. Among the Water Birds (Grebes to Grouse), the casuals are largely (more than one half) stragglers from the Old World; the rest are about equally from the West and from the West Indies and other parts of the tropics. It may be noted that No. 431, *Junco hyemalis oregonus*, is doubtless the same as No. 432, *Junco h. shufeldti* (= *connectens*). — J. A. A.

Schalow's the Published Writings of Anton Reichenow.[2] — This is a convenient list of the published writings of this eminent ornithologist, arranged chronologically, and numbering 288 titles. The list of titles is followed by a list of the new generic names, proposed by Dr. Reichenow, which number 38, of which 15 are proposed to replace earlier 'barbarous' or improperly constructed names. Then follows a list of the species described as new, numbering 342, and finally a list of the species named in honor of Dr. Reichenow, 17 in number. Dr. Reichenow's papers relate mainly to African birds, but include many of a more general character, and several special works of much importance. — J. A. A.

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[1] A | List of the Birds | of | Eastern North America | By Charles B. Cory | For sale by | Bradley Whidden | 18 Arch St., Boston | Boston | 1896 — 8vo, pp. 42.

[2] Anton Reichenow. Ein Verzeichniss seiner bisherigen Arbeiten. 1869–1896. 8vo, pp. 29. Dec. 1896.

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CORRESPONDENCE.

Captive Wild Birds.

To the Editors of 'The Auk':—

Dear Sirs:—I have read with great pleasure in your January issue, Mr. Owen's interesting paper on a captive Hermit Thrush, but there is one point in connection with his treatment of the bird—his liberating him—on which I should like to say a few words, particularly as it is almost universally supposed that to give a caged bird freedom, is a kind thing to do, and the happiest for the bird. He had taken the young Hermit before his training for a free life was finished, and accustomed him to having his wants supplied and his safety assured, without effort of his own. Then, when the season was nearly over, he thrust the young creature out into the world to forage for himself. The bird had not learned to seek his own food, nor, probably, to care for his own safety, and his natural ties were completely severed, so that he had no instructor. This is frequently done, and of course from the kindest motives, but it has always seemed to me a great mistake, and a cruelty to the young bird, to deprive him at one stroke of home, protection, shelter and food.

According to my experience, when birds are thoroughly well treated, not too closely confined to cages, and made happy under human care, they learn to appreciate it, and many of them prefer to remain where life is made easy for them. This is often the case, even with old birds who know the pleasures as well as the pains of freedom. When let out, of course they fly, but if they do not get lost they frequently return to their old quarters. Many cases of this kind have been reported, and I have had birds so attached to the comforts of their home that they even refused to leave the cage though the door was open all day long, and birds were free all around them.

Birds are naturally fond of their liberty, no doubt, and if I had the power to prevent it, not one should ever be caged, but after having interfered with their parental training, taken them from their natural life, and accustomed them to human care, to set them free seems to me to doom them to great hardships, if not to death.

Olive Thorne Miller.

A Desirable Substitute for Carbon Disulphide as an Insecticide.

To The Editors of 'The Auk':—

Dear Sirs:—The want of an efficient substitute for disulphide of carbon, one which should be free from the disgusting odor and extreme danger of this chemical, has long been felt by all having ornithological collections; and it seem not unlikely that the comparatively new preparation of formic aldehyde, known as 'formalin,' will fill this want.

Formalin is now easily obtained, is not expensive, and is neither inflammable, nor has it any unpleasant smell. The vapor of formalin is a powerful germicide, according to recent experiments; and only a few minutes are required for its complete diffusion and the disinfection of a room of moderate size. It is said to have no action on animal pigments.

A recent article on 'The Disinfection of Books by means of the Vapor of Formalin' concludes as follows:

"1. Books can be disinfected in a closed space, simply by vapor of commercial formalin by using 1 cc. of formalin to 300 cc. or less of air.

2. The vapor of formalin is rapid in its disinfectant action. The effect produced in the first fifteen minutes is practically equivalent to that observed after twenty-four hours.

3. An increase in the amount of air to each cc. of formalin is not counterbalanced by an increase in the length of time of exposure.

4. In case the disinfection has been incomplete, the vitality of the organisms has been so weakened that they survive only if transferred in a few hours to media suitable for their development.

5. The use of vapor of formalin is not detrimental as far as observed in any manner to the books, nor is it objectionable to the operator beyond a temporary irritation of the nose and eyes, somewhat similiar to that produced by ammonia."

Having no infested bird-skins, and being unable to find any Dermestes, or other beetles, I can only speak of its effect on the 'Clothes Moth' and larvæ. A number of the moths and caterpillars with the material on which they were feeding, were put in the trays of a museum case, about 5½ cu. ft. in capacity; and in the middle tray a saucer holding a couple of teaspoonfuls of commercial formalin. The can was kept shut for an interval varying from two hours to five minutes, the experiment being repeated a number of times. Exposure to the vapor for half an hour or more was fatal to both moths and larvæ; while often fifteen minutes in the case was enough to kill the moth, and less frequently the caterpillers as well. A longer time may be needed for the formalin vapor to reach and destroy insects which are not on the outside of the specimens, and possibly the disinfection may be found not to be only superficial at best.

If the alcholic solution — 'holzine' — can be obtained it would doubtless be better than 'formaline,' which is the aqueous solution of formic aldehyde.

I hope others will try this disinfectant, and report its success; for it would certainly be a gain if it were necessary to 'quarantine' our collections for only an hour or two, and without the odor and risk of fire, which now accompany the process.

Respectfully yours,

ARTHUR P. CHADBOURNE,

225 *Marlborough St., Boston, Mass.*

NOTES AND NEWS.

MAJOR CHARLES E. BENDIRE, U. S. A., one of the Founders, an Active Member, and a Councillor of the American Ornithologists' Union, died at Jacksonville, Florida, February 4, 1897, of Brights' disease, at the age of 61 years. He left Washington only five days before he died, in the hope of finding relief in the milder climate of Florida. His death, though sudden, was not altogether unexpected.

Bendire's chief work is his well-known 'Life Histories of North American Birds,' the second volume of which was recently reviewed in this journal (*antea*, pp. 104–106), but for many years he was a frequent contributor to 'The Auk' and to other ornithological journals. His death is a sad loss — in truth an irreparable loss — to American ornithology, occurring, as it has, with his great work on North American Birds less than half completed.

Major Bendire was born in Hesse Darmstadt, Germany, April 27, 1836, and came to this country in 1852. He soon enlisted as a private in the U. S. Army, and was gradually promoted till he reached the rank of Captain, in the Cavalry service, in 1886, and was shortly after retired for disability. In 1890 he was brevetted Major for gallant services rendered in fighting Indians in Montana in 1877! His long period of military service in the remote parts of the West gave him exceptional facilities for prosecuting his ornithological studies, which he evidently utilized to the fullest extent. His immense collection of birds' eggs, gathered during his military wanderings, long since became the property of the U. S. National Museum, where their donor has held for some years the position of Honorary Curator of the Department of Oölogy. He by no means, however, restricted his interests to the nests and eggs of birds, but was in all respects a well-equipped ornithologists, intent on investigating for himself all questions touching the work he had in hand.

He was well-known through correspondence, if not personally, to all working ornithologists in America, and to many abroad, but only those who knew him personally can appreciate his sterling integrity, his hearty friendship, his sincerity and earnestness.

In accordance with a standing rule of the Union respecting deceased Active Members (see Auk, XII, p. 199), a special memorial of Major Bendire will be presented at the next meeting of the American Ornithologists' Union, and published later in 'The Auk.'

HEINRICH GÄTKE, an Honorary Member of the American Ornithologists' Union, died at his home on the little island of Helgoland, on January 1, 1897, at the advanced age of nearly 84 years. He was an artist by profession, and visited Helgoland when twenty-three years of age for the purpose of making marine studies, and soon after was married there and made the island his life residence. He appears to have been early interested in birds, and soon after settling in Helgoland, he began to collect specimens and to make the observations on the migrations of birds, which have since made both Herr Gätke and the island of Helgoland famous in the annals of ornithology. Although he published many notes and minor papers on the birds of Helgoland, and on molting and color-change in birds, the ornithological results of his life work are comprised in his 'Vogelwarte Helgoland,' published in 1890 (see Auk, VIII, 1891, pp. 299, 300), and republished in English in 1895 (see Auk, XII, 1895, pp. 322–346, and XIII, 1896, pp. 137–153). As this work has already been noticed at length in this journal, further comment is not necessary in the present connection. Suffice it to say that while his observations, covering a period of fifty years, on the birds of Helgoland, and particularly on their migrations, are of the utmost value, his deductions and conclusions based thereon are not equally trustworthy, owing doubtless to the very limited extent of the area under observation and the lack of experience elsewhere. The following is from a recent sketch of Gätke by Mr. H. E. Dresser, published in 'The Zoologist' (March, 1897, p. 140). "Of very tall and commanding presence, with flowing hair and beard, . . . Gätke possessed an extremely genial and pleasant manner, and was an interesting companion. Always ready to impart information, he placed his notes most unreservedly at the disposal of any ornithologist who visited the island. . . . Although of German origin [he was "born at Pritzwalk, Mark Brandenburg"], he spoke and wrote English like an Englishman, and was in some respects even more English than German.

"Those who have known and learnt to appreciate his sterling worth will grieve deeply for him; but though he has gone his work remains, and his 'Vogelwarte Helgoland' will stand as a monument of industry and careful observation, carried on during a long and useful life. His intellect remained unimpaired to the last few days, and his end was a most peaceful one, carefully tended as he was by his devoted family."

CAPTAIN PLATTE M. THORNE, U. S. A., an Associate Member of the American Ornithologists' Union, died at his home in Rochester, N. Y., March 16, 1897, after a short illness from a complication of ailments, at the age of 59 years. He was born in Poughkeepsie, N. Y., and was a son of Judge Thorne of that city. In 1861 he enlisted at the head of the One Hundred and Fiftieth New York Volunteers, and served with distinction throughout the Civil War, being at one time on the staff of General Slocum, and later Acting Inspector-General to General Sheridan. At the close of the war he was brevetted Lieutenant-Colonel for faithful and

meritorious service. Later he was placed in command of Company C, Twenty-second Infantry, U. S. A., and was stationed for many years at various remote posts in the West, Fort Thorne, N. M., being named for him. He was retired in April last for disability due to an accident while on duty at Fort Keogh. For many years he took an active interest in ornithology, becoming an Associate Member of the A. O. U. in 1885, and while well known to many of our leading ornithologists, through correspondence, he has published comparatively little. His chief paper is a 'List of Birds observed in the vicinity of Fort Keogh, Montana, from July, 1888, to September, 1892,' published in 'The Auk' in 1895, (XII, pp. 211–219). Previously he had observed and collected for six years at Fort Collins, Colorado, and in 1887 published 'Additions to Mr. Drew's List of the Birds of Colorado' (Auk, IV, 1887, pp. 264, 265). He was a careful, conscientious observer, and made a considerable collection of ornithological specimens, many of which have been generously loaned or presented to specialists for examination or study. A wife and six children survive him.

'THE OSPREY,' in its issue for March, makes the announcement that Dr. Elliott Coues has been secured as Associate Editor of this excellent magazine. In this connection the editor says: "Our endeavor will be to make 'The Osprey' as a popular monthly, what 'The Auk' is as a technical quarterly." The March number contains an excellent portrait of the late Major CHARLES E. BENDIRE, with a biographical notice of this eminent ornithologist by Dr. F. H. Knowlton; also a portrait of Louis Agasiz Fuertes, with a number of his recent bird paintings, and a short notice of his work by the Associate Editor. There are various papers and many notes of general interest, but unfortunately it includes one article, 'A Peculiar Hybrid', that might well have been omitted. With the new aid now secured doubtless such slips will not again occur, and the journal has doubtless before it an era of increased prosperity and usefulness.

AMONG new claimants for notice is the illustrated monthly 'Birds,' of which several numbers have appeared. It is published by the Nature Study Publication Company of Chicago, at the very low price, considering its character, of $1.50 a year. It is profusely illustrated with colored plates done by "colored photography." The February number (No. 2) contains eleven quarto plates, representing the Blue Jay, Robin, Red-headed Woodpecker, Kingfisher, Red-winged Blackbird, and Cardinal, and four foreign birds, including a Mot-mot, Lory, etc. The illustrations are evidently photographed from mounted specimens, and thus show some defects in structural detail, but the colors are reproduced with surprising fidelity. The text is intended for popular reading, and some of the articles are written with special reference to young readers. The magazine should prove of much service to teachers in their

efforts to interest their pupils in birds, and seems especially worthy of commendation. We would suggest, however, that the publishers would do well to supply a table of contents with each number, to facilitate reference to the plates and articles.

WE HAVE before us No. 1 of Volume I of the 'Bulletin of the Michigan Ornithological Club,' published at Grand Rapids, Mich., "in the interests of Ornithology in Michigan." The Editor-in-Chief is L. Whitney Watkins, Manchester, Mich. The 'Bulletin' is to be published quarterly, and will doubtless prove a great stimulus to ornithological activity in Michigan and adjoining States. The Club, of which it is the official organ, has also taken a strong stand in favor of the strict enforcement of the game and fish laws of the State, and for the protection of birds. This first number of the Bulletin is in every way a credit to the Michigan Ornithological Club, and indicates earnestness and ability on the part of its members.

'THE ZOÖLOGIST,' in entering upon its Fourth Series, passes under the editorial management of Mr. W. L. Distant, Mr. J. E. Harting, who has edited the magazine so ably for the last twenty years, being obliged to retire on account of the pressure of other demands upon his time. While the typographic appearance of its pages remains for the most part unchanged, its long familiar exterior has given place to a pictorial, and perhaps more artistic cover, differing radically in color and make-up from that to which we have so long been accustomed. The scope of the Magazine is extended to include anthropology, at least so far as it relates to 'Early Man in Britain.' The official reports of Natural History Societies, however, will be omitted. The new editor trusts that the pages of 'The Zoölogist' may still "be filled with facts and conclusions, whilst controversy and hypercriticism may thus be crowded out." Under its new editorial management we trust the journal will continue to achieve the success that its sterling merit in the past has gained for it.

THE first fasciculus of a new Italian quarto journal of ornithology — 'Avicula, Giornale ornitologico italiana' — bears date Feb. 1, 1897. As its name indicates, it is to be devoted especially to Italian ornithology. The first number, consisting of 28 pages, begins the publication of a list of living ornithologists. Among the 'Notiziario' we are pleased to see the announcement of the formation of a society at Trieste for the protection of birds. In no country, perhaps, is there a greater need for such societies than in Italy. The journal is published at Siena, under the editorship of Sigismondo Brogi, with whom are associated as honorary editors Professor Enrico Hillyer Giglioli and Count Tommaso Salvadori, and numerous 'collaborators.'

A PROSPECTUS of a work entitled 'The Birds of Celebes and the Neighboring Islands,' by A. B. Meyer and L. W. Wiglesworth, has

been issued by R. Friedländer & Sohn of Berlin. About 350 species will be treated in two quarto volumes, with about 50 colored plates, and maps illustrating geographical distribution. The work is announced to appear during 1897. Subscription price, for the complete work, 10£.

Mr. W. E. Clyde Todd of the Biological Survey of the U. S. Department of Agriculture has in course of preparation a work on the birds of the western half of Pennsylvania, which work will discuss in detail their geographic distribution and migration within that section, as well as these subjects in general. That the work may be complete he needs the assistance of every reliable ornithologist and oölogist now residing in the section in question, or who has any notes, however fragmentary, on the birds thereof. He would be greatly obliged if every such person not already in correspondence with him would write him at once, feeling sure that such correspondence would be mutually helpful.

The recently organized United Ornithologists of Maine has elected the following officers for 1897: President, Arthur H. Norton, Westbrook, Me.; Vice President, Ora W. Knight, 384 Hammond St., Bangor, Me.; Secretary-Treasurer, Wm. L. Powers, Gardiner, Me. The object of this Society is to "encourage a systematic study of the Avifauna of the State" of Maine. The Society has already entered vigorously upon the preparation of a list of the birds of the State, showing their distribution by counties. An excellent report on the ornithology of Maine will doubtless result from this timely effort.

The date of the organization of the Massachusetts Audubon Society is given in the report of the A. O. U. Committee on Bird Protection as 1886; it should be 1896. The first member was enrolled February 10, 1896, and on the first anniversary of the Society it had 1280 members, and is now growing very rapidly.

An 'Audubon Society of the State of New York' was organized in February, 1897, and is working in coöperation with the American Museum of Natural History. Mr. Morris K. Jesup, the President of the American Museum, is also the President of the New York Audubon Society. Miss Emma H. Lockwood, 243 W. 75th St., New York City, is the Secretary-Treasurer. All correspondence relative to bird protection in New York State should be addressed to her. Circulars explaining the objects of the Society and applications for membership may be obtained from the Secretary.

There is a growing sentiment for the protection of birds in various portions of the country, which will no doubt result in the formation of Audubon Societies in other States, and also in the founding of 'Bird Day' in the schools.

The Light-House Board, Washington, D. C., in response to a request of the A. O. U. Committee, has issued orders prohibiting the egg traffic on the Farallone Islands, California.

Mrs. Louise M. Stephenson, of Helena, Arkansas, who is doing very important work in that State, has been added to the A. O. U. Committee on Protection of Birds. Mrs. Stephenson has for some months contributed weekly articles on 'Bird Day in Schools' and 'Why Should We Protect Our Birds?' to two of the most widely read papers of Arkansas.

The Chairman of the A. O. U. Committee on Protection of North American Birds will be glad to hear from the readers of 'The Auk' regarding the protection of birds in their localities, and earnestly urges the formation of Audubon Societies. Suggestions as to the formation of such societies, and kindred work will be cheerfully furnished on request.—WILLIAM DUTCHER, *Chairman, A. O. U. Committee on Bird Protection.*

THE following ERRATA in the last (January) number of 'The Auk' require correction.

Page 35, 7 lines from bottom, for *continued* read *combined.*
" 36, under figure in text, for *near A* read *near B.*
" 36, 6 lines from bottom, for *fig. 1* read *fig. 2.*
" 37, note 1, before *Feathers from Skins* omit *Cast-off.*
" 38, Explanation of Fig. 1, for *No. 4396* read *No. 4397.*
" 38, Explanation of Fig. 2, for *near B fig. 1* read *near A fig. 1.*
" 38, last line, after *obj.* insert *2mm. oil imm.*
" 39, next to last line, for *C fig. 3* read *C fig. 4.*
" 118, last line, for *Cf.* SALVADORI read *Cf.* ALLEN, Auk, XIII, 1896, 244.
" 119, near bottom, for 375*c* read 375*d.*
" 123, line 8 from bottom, for 97 read 96.
" 125, line 15 from top, for BONAP. read (BONAP.).
" 125, line 17 from top, for A. O. U. COMM. MS. read FAXON, Auk, XIII, 1896, 215.
" 129, after line 2 from top, insert
GENUS **EMBERNAGRA** LESSON, p. 245. This becomes
" 131, line 5 from top, for (LATH.) read (GMEL.).
" 131, line 15 from top, for WILS. read (WILS.).

WARBLING VIREO. PHILADELPHIA VIREO.